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**SOLICITATION FOR FINANCIAL  
ASSISTANCE APPLICATIONS  
NO. DE-SC02-00CH11005**

**COOPERATIVE RESEARCH AND DEVELOPMENT  
FOR ADVANCED MATERIALS IN ADVANCED  
INDUSTRIAL GAS TURBINES**

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January 3, 2000

To: Prospective Applicants

SUBJECT: SOLICITATION FOR FINANCIAL ASSISTANCE APPLICATION  
(SFAA) NO. DE-SC02-00CH11005 FOR COOPERATIVE RESEARCH  
AND DEVELOPMENT FOR ADVANCED MATERIALS IN  
ADVANCED INDUSTRIAL GAS TURBINES

**Executive Summary Letter**

This letter is a summary of the salient elements of this Solicitation for Financial Assistance Application (SFAA), but is not an integral part of the SFAA. Should there be any conflict between this Executive Summary Letter and the SFAA, the data and information in the SFAA shall prevail.

The Department of Energy, Office of Industrial Technologies, invites applications for federal assistance for research and development for advanced materials in Advanced Industrial Gas Turbines.

The purpose of this research is to advance the state of development of one or more durable and cost-effective advanced materials systems for integration into Advanced Industrial Gas Turbine Systems without sacrificing efficiency. In order to reach this goal, development, subsystem testing, and demonstration of optimized and fully integrated components must be performed.

The Scope of Work for this solicitation includes five task areas and two subtasks, described fully in Section 1.2 of this SFAA. Tasks 1 and 2 may be performed with respect to any gas turbine, including microturbines. However, work under all tasks must have applicability to an Advanced Industrial Gas Turbine, and Tasks 3, 4 and 5 must be performed on an Advanced Industrial Gas Turbine. All work proposed under an application must be scheduled for completion within the three-year life expectancy of this program.

In addition to Tasks 1 through 5, applicants will be required to develop and submit a program and planning report and a commercialization plan depending on the tasks proposed. The program and planning report is considered Subtask A and will be required for all applicants. The commercialization plan is required if proposing Task 3, 4, and/or 5 and is considered Subtask B.

DOE expects to award one (1) to five (5) cooperative agreements under this solicitation. It is estimated that individual awards will range in value between approximately \$300,000.00 and \$1,500,000.00 of DOE funding, and will require awardee Cost Sharing.

A minimum non-federal cost sharing commitment of 30% of the total proposed costs for Task 1 & 2, 45% of Task 3 & 4, and 60% of Task 5 is required. Any non-profit or for-profit organization or other institution of higher education, or non-federal agency or entity is eligible to apply, unless otherwise restricted by the Simpson – Craig Amendment. DOE National Laboratory participation as a subcontractor is limited to no more than 30% of the total cost of all tasks to be performed, and no more than 50% of the cost of any individual task.

Significant items of interest concerning this SFAA are summarized on the Task-Dependent Work Elements matrix attached to this Executive Summary Letter.

This SFAA contains three Qualification Criteria, summarized as follows, all of which must be met in order for an application to be evaluated and considered for award:

1. Teaming – Applicants are expected to utilize a variety of team members, including, but not limited to, gas turbines manufacturers, suppliers, vendors, industry trade organizations, and end users. Multiple gas turbine manufacturers on a team is encouraged. The following minimum requirements must be met for eligibility for award:
  - A. All tasks require the participation of a material processor.
  - B. All tasks require the participation of a manufacturer of an Advanced Industrial Gas Turbine.
2. National Laboratory Participation – In the event of teaming with DOE National Laboratories, laboratory participation must be limited to lower-tier participation, and is further limited to no more than 30% of the total cost all tasks to be performed. However, if work under more than one task is proposed, the amount of laboratory participation may not exceed 50% for any individual task. If only one task is proposed laboratory participation is limited to no more than 30%. Applications submitted directly by a DOE National Laboratory, or which involve DOE National Laboratory participation in excess of the amount allowable, will not be considered for award.

3. Cost Sharing – Applicants are required to cost share the following minimum percentages of the total costs to be incurred performing the respective task(s) to be eligible for award under this solicitation.

Task 1 or Task 2	30 percent
Task 3 or Task 4	45 percent
Task 5	60 percent
Subtask A and Subtask B	*

- \* The cost share requirement for Subtask A and Subtask B shall be at the level of cost share required for the lowest task number proposed. In addition, all costs associated with Subtasks A and/or B shall be reflected in the budget information provided for the task(s) which the subtask is a part.

Prior costs incurred (i.e., costs to conduct prior research or development, patents, or to develop technical reports under previous research efforts) should not be proposed and will not be considered as cost share. Fee or profit will not be paid under any award resulting from this solicitation and foregone fee or profit will not be accepted as cost sharing.

Applicants are advised that the stated minimum cost sharing requirements will not be waived or adjusted during the negotiation of any award resulting from this solicitation.

An application that fails to meet the minimum cost sharing requirements of this solicitation will not be considered for award.

This SFAA will be governed by the DOE Financial Assistance Regulations, 10 CFR Part 600; guidance documents can be accessed on the DOE Financial Assistance Home Page at: <http://www.pr.doe.gov/fahome.html>.

Instructions for submission of applications are found in Section 6 of the SFAA.

Any questions concerning this solicitation must cite the solicitation number and be addressed in writing by facsimile at (630) 252-5045, by mail to the address cited in Section 6; or by electronic transmission to Internet address [roberta.schroeder@ch.doe.gov](mailto:roberta.schroeder@ch.doe.gov) which is highly encouraged.

Sincerely,

Roberta D. Schroeder, Chairperson  
Source Evaluation Panel

# TASK-DEPENDENT WORK ELEMENTS

	<b>TASK 1</b>	<b>TASK 2</b>	<b>TASK 3</b>	<b>TASK 4</b>	<b>TASK 5</b>
	<b>Advanced Materials System concept/test component design/test</b>	<b>Advanced Material System optimization and testing</b>	<b>Turbine preparations</b>	<b>System fabrication and proof test on turbine</b>	<b>Pre-commercial demonstration</b>
<b>1. Type of Gas Turbine/Test Device</b>	Any	Any	Advanced Industrial Gas Turbine	Advanced Industrial Gas Turbine	Advanced Industrial Gas Turbine
<b>2. Applicability to Advanced Industrial Gas Turbine</b>	Recommended	Recommended	Recommended	Recommended	Recommended
<b>3. Participation of a material processor</b>	Required	Required	Required	Required	Required
<b>4. Multiple Gas Turbine Manufacturers on Team</b>	Encouraged	Encouraged	Encouraged	Encouraged	Encouraged
<b>5. Participation of Advanced Turbine Manufacturer</b>	Required	Required	Required	Required	Required
<b>5. Participation of an End User</b>	Encouraged	Encouraged	Encouraged	Encouraged	Required
<b>6. Start Point (Based on Maturation Level of the Advanced Materials System or Advanced Industrial Turbine concept)</b>	Experimental evidence of potential	Completion or satisfactory progress on Task 1	Completion or satisfactory progress on previous Task	Completion or satisfactory progress on previous Tasks	Completion or satisfactory progress on previous Tasks.
<b>7. Duration of Demonstration</b>					
<b>Minimum</b>	N/A	N/A	N/A	N/A	4000 hrs.
<b>Objective</b>	N/A	N/A	N/A	N/A	8000 hrs.
<b>8. End User Site</b>					
<b>Generate Electricity</b>	N/A	N/A	N/A	N/A	Always
<b>Grid Connected</b>	N/A	N/A	N/A	N/A	Always
<b>Operating Rate per Annum</b>	N/A	N/A	N/A	N/A	>4000 hrs.
<b>Industry of the Future</b>	N/A	N/A	N/A	N/A	Encouraged
<b>9. Perform Subtask A (Program Definition and Planning)</b>	Required	Required	Required	Required	Required
<b>10. Perform Subtask B (Commercialization Plans)</b>	N/A	N/A	Required	Required	Required



## **1. Program Description**

### **1.1 Program Overview**

#### **1.1.1 Introduction**

The Industries of the Future (Section 1.1.3, Definition 4) Program within the Department of Energy's (DOE) Office of Industrial Technologies (OIT) focuses on meeting the energy efficiency needs of nine major energy and waste intensive industries. These industries are Aluminum, Agriculture, Chemicals, Forest Products, Glass, Metal Casting, Mining, Refining, and Steel. The process used in the Industries of the Future program looks at the total needs of these industries including specific process improvements, plant energy improvements, and supporting technologies to service multiple industries.

One area that impacts all nine industries is the restructuring of the U.S. electricity generation industry. As part of restructuring, industry needs for electricity, steam, and direct mechanical drives are being met by new and innovative distributed generation and combined heat and power (CHP) systems. The OIT works to utilize new systems for use in the Industries of the Future. Program developments include turbines, microturbines, and reciprocating engines for industrial use.

The deployment of gas turbines is a critical component for meeting the industrial challenges of distributed generation and doubling the installed CHP base by 2010 while maintaining or improving the efficiency compared to traditional systems. For a deregulated power industry, efficient, high-performance, cost effective, and clean burning gas turbines are positioned to capture significant portions of the emerging distributed generation markets. These turbines will play a vital role in promulgating the widespread installation of energy efficient CHP systems in the Industries of the Future.

Gas turbine development supporting the Industries of the Future aligns closely with the availability of material systems that can withstand very high temperatures. Basically, the power output of a gas turbine depends directly on the temperature at which it operates. While the efficiency of the gas turbines itself is somewhat less strongly dependent on the operating temperature, the potential for useful heat recovery in a CHP cycle is again directly related to the gas turbine operating temperature. The performance of gas turbines is therefore limited by the temperature, strength and corrosion capabilities of the structural materials in the engine hot section.

Advanced materials systems continue to show the potential for a 2% incremental gain in efficiency and up to a 15% increase in output power in simple cycle compared to all-metal industrial turbines with air-cooled components. These enabling material systems are now emerging in actual service. Nevertheless, many of these systems have not yet achieved the full potential of their capabilities. World environmental stresses are creating new stretch goals on fuel efficiency, emissions, and cost of clean power. New

technologies may have emerged that deserve investigation, and there is a renewed interest for survival of high-temperature components in the arena of alternative biomass fuels.

It is essential to discuss and determine realistic and meaningful stretch goals for gas turbines. It is also essential to determine the potential for further advances in existing enabling materials and to consider any radically new material systems.

The solicitation Scope of Work (Section 1.2) includes five technology development work areas, described therein as Tasks 1, 2, 3, 4 and 5 and Subtasks A and B. The tasks represent a progression of technology maturation stages. Tasks 1 and 2 involve advanced materials systems development, Tasks 3 and 4 involve turbine modifications and fabrication, and Task 5 involves pre-commercial demonstration. Depending on the current readiness of its advanced materials technology, an applicant may propose to start at any task if prior work has been performed that would satisfy completion or sufficient progress of the previous task(s). Applications may address any combination or portion of the tasks. While it is not mandatory for applications to address only sequentially numbered tasks, there must be a logical sequence to the tasks applied under based on the nature of the work to be performed.

Although it is the intention of this solicitation to support development of advanced materials systems that will culminate in the completion of Task 5, there also is relevancy in gaining a better understanding of advanced materials systems and their impact on gas turbines. In such cases, development of a completed commercial system may not be feasible. For example, development may end prior to the maturation state of Task 5, or Task 5 may be scheduled to complete a demonstration that is less than the 8000 maximum number of hours to be supported under Task 5 of this solicitation. (Because of schedule and budget constraints, the specifications under Task 5 of this solicitation support up to 8000 hours of demonstration of advanced material systems (Section 1.1.3, Definition 2) in Advanced Industrial Gas Turbines (Section 1.1.3, Definition 1).) An 8000-hour demonstration will be deemed sufficient to characterize the potential of the advanced material system(s) to meet or exceed normal service life of their associated Advanced Industrial Gas Turbine. Regardless of the tasks proposed, applications will raise the maturation level of the concept relative to the solicitation objectives (Section 1.1.2).

### **1.1.2 Objectives**

The purpose of this research is to advance the state of development of one or more advanced materials systems for integration into Advanced Industrial Gas Turbine Systems (Section 1.1.3, Definition 1) used in power generation service. In order to reach this goal, development, subsystem testing, and demonstration of optimized and fully integrated components using advanced materials systems must be performed. The fully developed, demonstrated advanced material(s) and turbine system(s) would accomplish the following objectives:

1. Improve the performance of Advanced Industrial Gas Turbines through the use of advanced materials systems. Potential benefits include: 1) decreased energy consumption and emissions, 2) increased process efficiencies, 3) enhanced U.S. industrial competitiveness, and 4) decreased reliance on strategic materials (raw or engineered materials for which the U.S. is fully or near fully dependant on foreign sources for supply). Other projected benefits include increased operating time before maintenance and overhaul, utilization of waste fuels, etc.
2. Identify promising advanced material systems, optimize processing techniques and foster maturation of a competitive, cost effective manufacture of these system(s) in commercial quantities.
3. Position or adapt the technology for transition from natural gas to back-up fuels as well as alternative biomass-derived fuels, while achieving a substantial reduction in Oxides of Nitrogen (NO<sub>x</sub>) emissions for these fuels, and decrease in energy consumption.
4. Demonstrate that the durability of the proposed component(s) of advanced materials is at least as durable as the present day component it is to replace.
5. Improve the performance of a variety of gas turbine characteristics including efficiency, fuel flexibility, cost of power, and reliability and maintainability.
6. Encourage adoption and use of energy-efficient cost-effective gas turbines.
7. Capitalize on the considerable supporting information on materials already available from prior Government-sponsored research.

### 1.1.3 Definitions

1. **Advanced Industrial Gas Turbine** – For the purposes of this solicitation, an Advanced Industrial Gas Turbine shall be a new or upgraded gas turbine model that deploys one or more technologies that partially or totally accomplishes the following goals for higher energy efficiency, lower emissions, and increased competitiveness in the Industries of the Future:
  - A. **Efficiency** - For industrial power generation systems, a 15 percent improvement in efficiency compared to the best technology in its class that was available in 1991 vintage power systems. These efficiencies refer to how effectively fuel is converted into electrical energy. The efficiency is based on the lower heating value (LHV) of natural gas.
  - B. **Environment** - NO<sub>x</sub> emissions to be equal to or lower than nine parts per million by volume.

- C. **Fuel Flexibility** - Natural gas-fired designs are to be adaptable to future firing with biomass and coal-derived fuels.
  - D. **Cost of Power** - Busbar energy costs at 10 percent less than current state-of-the-art turbine systems, meeting the same environmental requirements.
  - E. **Reliability and Maintainability** - Equivalent to current state-of-the-art turbine systems.
2. **Advanced Material System** - For the purpose of this solicitation, an advanced material system is an engineered material composed of single or multiple components that demonstrates the potential for achieving higher efficiency, lower cost, lower emissions or other concrete advantages when research results are generally applied to gas turbines. In gas turbines, such materials are normally alloy or ceramic-based. The architecture of such systems brings together individual specialized elements, that singly or in combination, achieve new levels of performance. The properties of such advanced material systems are logical for their intended application as components in gas turbines, potentially capable of being produced competitively in commercial quantities, and exhibit a maturity that is beyond the state of basic research.
  3. **End User** - An organization or business entity that generates electricity or which directly markets power generation systems for such purpose.
  4. **Industries of the Future** - The nine energy- and waste-intensive industries (agriculture, aluminum, chemicals, forest products, glass, metal casting, mining, petroleum, and steel<sup>1</sup>) currently involved in the Industries of the Future Program. The Industries of the Future Program, led by DOE's OIT, creates partnerships among industry, government, and supporting laboratories and institutions to accelerate technology research, development, and deployment.
  5. **Innovation** - previously unknown, unused, or not broadly adopted combination of methods, materials, processes, or conditions.
  6. **Material Processor** – Any organizational entity involved in developing, making, shaping, or treating an Advanced Material System such as manufacturers of ceramic components, alloy casting houses, coating applicators, and thermal and mechanical processors.

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<sup>1</sup> For more information, please refer to the following site on the Internet.  
<http://www.oit.doe.gov/industries.shtml>

7. **Stakeholder** - An individual or group such as an Industry of the Future Company, industrial trade organization, end user, research organization, university, regulatory body, financial organization, sponsor, or marketer who have title, financial share, special skill or resource, mandated responsibility, or other direct interest in the undertaking to develop, enable, negotiate, deploy, or commercialize advanced material systems.
8. **Team Member** – A **stakeholder** with contractual responsibilities under this project - either to the DOE, i.e., the applicant; or to the applicant, e.g., subcontractors, consultants, etc. Such team members may include, but are not limited to, gas turbine manufacturers, Industries of the Future Companies, research organizations, universities, technology owners, suppliers, vendors, industry trade organizations, and end users.

## 1.2 Scope of Work

This Scope of Work covers applied research and pre-commercial demonstration in five work areas as described below in Tasks 1, 2, 3, 4 and 5. In addition to these tasks the Scope of Work includes Subtasks A and B. Subtask A will require the participant to provide a report covering the potential technical market and technical/economic barriers. Subtask B will require the participant to provide a commercialization plan for advanced industrial turbines utilizing advanced material system(s).

The Tasks represent an increasing progression of maturation stages for technology development. Tasks 1 and 2 involve research, design, and development of advanced materials systems, Tasks 3 and 4 involve technology systems development including gas-turbine modifications, and Task 5 involves pre-commercial demonstration. Depending on the current maturation of proposed technologies, the work may start at any task if prior work has been performed that would satisfy completion or sufficient progress of the previous task(s). For example, an applicant with an innovative concept but limited development experience for that concept may decide to apply only under Task 1 - whereas applicants with more developed concepts may elect to bypass the initial tasks. Applications may address any combination or portions of the tasks. While it is not mandatory for applications to address only sequentially numbered tasks (e.g., applying under Tasks 1, 3 and 4 is allowable), there must be a logical sequence of the tasks to be performed based on the nature of the work to be performed.

The ultimate maturation of technologies will be reached upon the attainment of the solicitation objectives in a pre-commercial demonstration of 8000 hours (Task 5). Although it is the intention of this solicitation to support development of advanced material systems that will so culminate, there also is relevancy in gaining a better understanding of the advanced materials systems and their impact on gas turbines. In such a case, development of a completed commercial system may not be feasible. For example, development may end prior to the maturation state of Task 5, or Task 5 may be scheduled to complete less than the 8000 hours (but more than 4000 hours as discussed below)

identified as a goal for commercialization (Section 1.1.2, Item 4). Regardless of the tasks proposed, applications will raise the maturation level of the concept relative to the solicitation objectives.

Insofar as Subtask A and B are concerned, all participants will complete the program and planing report required by Subtask A, which will become a subtask of the lowest numbered task proposed. Additionally, participants performing work under Tasks 3, 4 and/or 5 will complete the commercialization plan required by Subtask B as a part of the lowest numbered task proposed that is equal to or greater than 3. In addition, all costs associated with Subtasks A and/or B shall be reflected in the budget information provided for the task for which the subtask is a part.

All work proposed to be performed under an application must be scheduled for completion within the three-year life expectancy of this program.

Under Tasks 1 and 2 that follow, the work may be performed with respect to test devices or turbines that could serve as a logical and cost effective intermediate basis for developing technologies for advanced material systems. However, any such technology developed under Tasks 1 and 2 must have applicability to Advanced Industrial Gas Turbines.

Under Tasks 3, 4 and 5 that follow, all work must be performed with respect to Advanced Industrial Gas Turbines (including test devices suitable to characterize aspects of Advanced Industrial Gas Turbines), and the demonstration required under Task 5 must be performed on an Advanced Industrial Gas Turbine(s). In performing this work, one or more such turbines may be used.

Work under all tasks requires the participation of material processors (Section 1.1.3, Definition 6) at any level (applicant or sub-applicant) with sufficient responsibility to accomplish the work proposed. Work under all tasks also will be enhanced by the participation of an end user (Section 1.1.3, Definition 3). For these tasks, this solicitation encourages the coordination of technical and administrative activities with an end user. Long-term demonstration under Task 5 should be conducted at a host site that is committed by the applicant. We encourage the demonstration to be conducted at an Industry of the Future Company.

**Task 1** – The starting point of this task shall be, as a minimum, a technological concept(s) of an advanced material system(s) with prior experimental evidence of its potential for meeting the solicitation objectives. The participant will identify the form, function, and fit of all components necessary to execute the proposed technology. The participant also will develop preliminary component designs compatible with the properties of the advanced material system(s). The preliminary component designs will consider ease of manufacture and insertion and function of the component in the turbine. Testing on preliminary articles may be done at a scale suitable to confirm the design parameters that were used and to

give qualitative and quantitative indications that the components will perform as planned.

**Task 2** - The participant will complete detailed designs of the selected system components. The design process will include the optimization and cost reduction of the processing, fabrication, and integration of the selected components into a viable turbine system. The components will be manufactured and the sub-system will be assembled. Development and testing will be done to verify and optimize the overall approach, to provide operating and control parameters during manufacture and use, and to provide full-scale definition such as allowable turbine operating ranges, sensitivity to fuel variability, and other factors affecting the performance and competitiveness of the turbine system.

**Task 3** - The design of an Advanced Industrial Gas Turbine will be adapted in parallel to component development to assure compatibility, optimum fit, and functionality. The work under this task will integrate hardware, controls, and operating procedures for startup, steady operation over the Advanced Industrial Gas Turbine's usual power range (for example 50% to 100% of rated output), planned changes (such as anticipated shutdown or transitions of operating load), and unexpected changes in power output (such as lost load) and determining energy efficiency and emissions.

**Task 4** – The applicant shall design and fabricate a complete Advanced Industrial Gas Turbine system that utilizes the components developed under Task 2 or elsewhere. The components shall exhibit the form, function, and fit compatible with the modified Advanced Industrial Gas Turbine developed either under Task 3 or elsewhere. The applicant shall prove, either by subsystem rig testing or by demonstrating on an Advanced Industrial Gas Turbine, the ability of the subsystem components to perform as planned. Such testing shall include those sensors and controllers needed to maintain testing over the design operating range of the turbine. Test results shall include relationships among performance, efficiency, emissions, temperatures, and all other relevant parameters that quantify and qualify the system for commercial delivery. The proof testing shall be based on natural gas fuel or any other fuel with a viable market presence in the Industries of the Future such as waste fuels and biomass. Also, the market may require dual fuel capabilities. Such dual fuel capabilities may be considered in the design.

The completion of Task 4 would result in the assembly of an Advanced Industrial Gas Turbine that incorporates components completed under this task or elsewhere. The Advanced Industrial Gas Turbine shall be ready for insertion into a commercial package that is suitable for shipment, installation, and demonstration in the field under Task 5.

**Task 5** – A host site(s) will be selected for demonstration of the Advanced Industrial Gas Turbine qualified either by the completion of Task 4 or elsewhere.



The participant will integrate the Advanced Industrial Gas Turbine with the balance of plant equipment such as a generator that is compatible with the needs of a specific host site(s). The completion of Task 5 would result in an 8000-hour demonstration of an Advanced Industrial Gas Turbine that can be reasonably expected to meet project objectives. At a minimum, the demonstration shall comprise 4000 hours of operation with natural gas fuel at a host site that is compatible with an operating rate of at least 4000 hours per annum.

The applicant shall complete a coordinated plan for the demonstration that incorporates the perspectives of all relevant parties, including the host site. The plan will also assign responsibilities on all matters necessary to execute the demonstration plan, such as business arrangements, balance of plant equipment, site construction, site integration, periodic inspections of hardware, visitations of third parties, data acquisition at the host site to verify expected benefits, and obtainment of environmental, construction, operating, and other permits.

In support of the Office of Industrial Technologies and the nation's industries, it is preferred that the demonstration be conducted at an Industry of the Future Company. If it is not feasible to conduct the demonstration at an Industry of the Future Company or if there are valid reasons to do the demonstration elsewhere, a host site other than Industry of the Future Company may be proposed. Host sites comprising buildings or natural gas and electric utility sites may be relevant to programs of the Office of Energy Efficiency and Renewable Energy, Office of Building and Community Systems and the Office of Power Technologies respectively. In such cases, the results of the demonstrations will be coordinated with these offices as feasible and appropriate by the DOE Program Manager.

The demonstration shall be representative of significant market segments of the distributed power generation industry. As a result, the successful demonstration at the host site will be expected to exemplify the resolution of the typical barriers (such as technical, environmental, industry acceptance, and control issues related to the use of advanced material systems) that impede the widespread adoption of distributed generation. In this regard, all hours of operation accumulated under the demonstration shall be gained while generating electric power. Additionally, all such hours of operation shall be accumulated while the host site is interconnected to the existing local utility transmission and distribution grid that exists for the routine transmission and distribution of electric power. Accordingly, the balance of plant equipment shall be sufficient to generate and condition such electric power, and all hardware shall be provided for interconnection, transmission, and distribution on the local utility grid. (The sole use of isolation switches shall not be sufficient to meet this requirement.)

**Subtask A** – Subtask A will be performed in conjunction with the lowest numbered task under which the participant will do work. In addition, all costs associated with this subtask shall be reflected in the budget of the task within



which the subtask will be performed. The completed report must be received within 90 days of award of the cooperative agreement and will be submitted in accordance with topical report requirements (Ref. Reporting Requirements Checklist, Appendix A).

With emphasis on the Industries of the Future but not excluding other applications, the report will further define completed distributed generation and combined heat and power systems likely to be available at the successful completion of this project. The participant will identify and quantify the potential technical markets for such systems. In areas such as energy efficiency, performance, cost, and emissions, the participant will provide detailed rationale that supports these projections. All barriers such as the lack of uniform code standards that will impact on the technical market will be identified. However, any such barriers that are out of the control of the participant shall be deemed not to impact on the projected technical market.

**Subtask B** – Subtask B will be performed in conjunction with the lowest numbered task of Tasks 3, 4 and/or 5 under which the participant will do work. In addition, all costs associated with this subtask shall be reflected in the budget of the task within which this subtask will be performed. The completed report must be received within 180 days of initiation of the lowest numbered Task (3-5) under which the participant will do work proposed. This report will be submitted in accordance with topical report requirements (Ref. Reporting Requirements Checklist, Appendix A).

The main impetus for this work is the commercial implementation of efficient, clean, and cost effective Advanced Industrial Gas Turbines with advanced material systems that are deployed in distributed generation and combined heat and power systems. It is essential that a commercialization plan support the proposed advanced material systems and achieve the goals of this solicitation (Section 1.1.2). Participants doing work under Tasks 3, 4, or 5 shall complete commercialization plans and strategies for all relevant functions in the commercialization process such as cost-effective manufacturing, marketing, production volumes, and support for the participant's Advanced Industrial Gas Turbine system. The commercialization plan will emphasize market applications in the Industries of the Future.

### **1.3 Reporting Requirements/Deliverables**

1. The Reporting Requirements applicable to award(s) resulting from this solicitation are set forth on the Federal Assistance Reporting Checklist (DOE F 4600.2), found under Appendix A.
2. Technical Papers – Awardees shall write and present a technical paper related to work performed under an award resulting from this solicitation at a technical conference or symposium, within the continental United States, no less often than once per year during the duration of the award.
3. Briefings – Awardees shall present briefings at a site to be designated by the DOE Project Officer (potential sites include, but are not limited to, Chicago, IL; Washington, DC; or awardee facility). The briefings will outline and explain progress and the results of the project effort. The briefings will involve the awardee's Principal Investigator and, as needed, key personnel and support personnel. Projected briefing schedule:
  - a. One briefing within 60 days after award
  - b. One briefing 30 days before award expiration
  - c. Briefings no more often than every 3 months between the initial and final briefings

### **1.4 Type of Award Instrument**

Award(s) resulting from this solicitation shall be made using a Cooperative Agreement. A sample copy of a Cooperative Agreement is found under Appendix B.

### **1.5 Number of Anticipated Awards and Estimated Funding**

DOE expects to award one to five cooperative agreements under this solicitation. It is anticipated that individual awards will range in value between approximately \$300,000 and \$1,500,000 of DOE funding, and will require awardee Cost Sharing – see Section 2.4. An award will not exceed a three-year period of performance.

As applicants may apply under one or more of the five tasks within the solicitation Scope of Work there is a wide range in the number of potential awards and award values.

Estimated DOE funding is \$6 million over the three-year period. DOE reserves the right to fund in whole or in part any, all, or none of the applications submitted in response to this solicitation. All awards are subject to the availability of funds.

## **1.6 Anticipated Selection and Award Dates**

The Government expects to select applications for award on or about March 28, 2000. Cooperative Agreements are expected to be awarded on or about June 1, 2000. Unsuccessful applications will be retained by the Government unless their return is specifically requested, in writing, by the applicant.

## **2. Application Requirements**

### **2.1 Eligibility**

Any non-profit or for-profit organization, university or other institution of higher education, or non-federal agency or entity is eligible to apply, unless otherwise restricted by the Simpson-Craig Amendment (Reference Section 7.6 of this solicitation).

Applicants, other than those described in Section 501(c)(3) of the Internal Revenue Code, that are seeking financial assistance under this solicitation, are subject to the eligibility requirements of Section 2306 of the Energy Policy Act of 1992 (EPAAct).

### **2.2 Teaming**

Applicants performing under this Scope of Work are expected to utilize a variety of team members (Section 1.1.3, Definition 8) including, but not limited to, material processors, gas turbine manufacturers, suppliers, vendors, companies representing Industries of the Future (Section 1.1.3, Definition 4), universities, industry trade organizations, and end users. Multiple gas-turbine-manufacturers on a team is encouraged. Demonstration at an Industry of the Future host site is encouraged.

**Teaming will be evaluated in accordance with the Evaluation Criteria established in Section 4.2 of this solicitation, and will also be reviewed for a determination of eligibility under the Qualification Criteria requirements of Section 2.5 of this solicitation.**

The following minimum requirements must be met for eligibility for award:

1. All tasks require the participation of a material processor.
2. All tasks require the participation of a manufacturer of an Advanced Industrial Gas Turbine.

### **2.3 National Laboratory Participation**

In the event of teaming with DOE National Laboratories, laboratory participation must be limited to lower-tier participation, and is further limited to no more than 30% of the total cost of all tasks to be performed. However, if work under more than one task is

proposed, the amount of laboratory participation may not exceed 50% for any individual task. If only one task is proposed laboratory participation is limited to no more than 30%.

Applications submitted directly by a DOE National Laboratory, or which involve DOE National Laboratory participation in excess of the amount allowable, will not be considered for award.

Additionally, all costs associated with DOE National Laboratory participation via the use of a Cooperative Research and Development Agreement (CRADA) must be included in the cost sharing proposed by the applicant (see Section 2.4) and be paid for using only applicant cost sharing dollars.

A Letter of Commitment from an authorized representative of the laboratory, confirming the laboratory's agreement to participate in the manner described in the application, shall be submitted with the application. Approval of the cognizant DOE Contracting Officer for the laboratory's management and operating contract must be obtained prior to the laboratory beginning work.

## **2.4 Cost Sharing**

To be eligible for award under this solicitation, applicants are required to cost share the following minimum percentages of the total costs to be incurred in performing the respective task(s);

Task 1 or Task 2	30 percent
Task 3 or Task 4	45 percent
Task 5	60 percent
Subtask A or Subtask B	*

For example:	Total Proposed Cost of Task 1: \$300,000
	Applicant's 30% Cost Share: \$ 90,000
	DOE Share 70%: \$210,000

- \* The cost share requirement for Subtask A and Subtask B shall be at the level of cost share of the task under which these subtasks will be performed as described for Subtask A and Subtask B under the Scope of Work, Section 1.2, of the solicitation. In addition, all costs associated with Subtask A and/or B shall be reflected in the budget information provided for the tasks which the subtask is a part.

For the purposes of evaluating applicants proposed cost share the percentage calculated from the cost information provided will be rounded to the nearest full percentage. Prior costs incurred (i.e., costs to conduct prior research or development, patents, or to develop technical reports under previous research efforts) should not be proposed and will not be

considered as cost share. Fee or profit will not be paid under any award resulting from this solicitation and foregone fee or profit will not be accepted as cost sharing.

DOE preference is for applicants to share all costs (on invoices submitted to DOE) on a pro-rata basis. In accordance with EAct requirements, all costs incurred must meet a 20% pro-rata cost share for Tasks 1, 2, 3, and/or 4 and a 50% pro-rata cost share for Task 5. At a minimum these percentages must be reflected at the time of invoicing. However, for this solicitation, cost sharing above the EAct requirement may be the time certain specific costs are incurred, or when certain specific actions are performed. This is acceptable if the nature of the work makes cost sharing all costs as incurred impractical or unworkable.

In the event a project is terminated early, or not funded to its completion, applicants will be liable for their pro rata share of the total allowable costs for work performed.

Applicants are required to complete the representation found under Appendix C of this solicitation attesting that their proposed cost sharing meets all of the requirements of 10 CFR 600.123.

The required cost sharing for each of Tasks 1 – 4 exceeds the minimum requirements established under EAct. These higher rates are required in order to demonstrate a high commitment from applicants to develop their proposed advanced materials system(s), and to provide DOE the opportunity to assist a larger number of applicants from the limited amount of public funds available.

Applicants are advised that the stated minimum cost sharing requirements will not be waived or adjusted during the negotiation of any award resulting from this solicitation.

**An application that fails to meet the minimum cost sharing requirements of this solicitation will not be considered for award.**

## **2.5 Qualification Criteria**

This solicitation contains three Qualification Criteria. **Applications that do not meet all of the qualification criteria as stated in each of the referenced sections will not be evaluated or considered for award.** A Task Requirements Matrix summarizing these requirements is provided at Appendix Q of the solicitation. The completed Task Requirements Matrix shall be submitted as part of the application, in accordance with Section 3.4 (A)(1) of this solicitation.

The following three Qualification Criteria apply:

1. **Teaming** – reference Section 2.2:
2. **National Laboratory Participation** – reference Section 2.3:

3. **Cost Sharing** – reference Section 2.4:

**2.6 Government Furnished Property**

NONE

Aside from the Government furnished property described in this Section (if any), applicants are expected to provide all necessary personnel, facilities, special test equipment, and materials necessary to complete the proposed project, and are encouraged to use existing facilities to the maximum extent possible. Other than utilization of a DOE National Laboratory as may be specifically authorized in Section 2.3 above, government-owned facilities and/or property will not be provided to assist you in the accomplishment of the statement of work.

3. **Application Instructions and Format**

**3.1 Application Submission Costs**

The Government is under no obligation to pay any costs associated with the preparation or submission of applications if award is not made. If an award is made, such costs may be allowable as provided in the applicable cost principles (see 10 CFR 600.127 and 600.222).

**3.2 Overview**

Applications should fully address all of the requirements of this solicitation, and be submitted in accordance with the format set forth in this Section. In addition, applications should be direct, concise, and informative. Marketing and/or promotional information and non-project related discussion will not be evaluated.

The Government intends to select applications for award based upon the initial submission of applications, without discussions, negotiations or revisions. Therefore, it is essential that initial applications contain the applicant's best terms from a technical, business management, and cost standpoint. Nevertheless, the Government reserves the right to conduct discussions or negotiations, and to request revised offers, if it considers it to be in the best interest of the Government to do so.

Any consultants identified in the application must have agreed to serve in the manner and to the extent described in the application. A Letter of Commitment signed by each consultant, certifying availability, must be submitted as part of the application.

If any physical facilities, equipment, and instrumentation to be used to perform the research identified in the application are not the property of the applicant, and are not to

be purchased or leased for this project, their source must be clearly identified and their availability specifically confirmed in the application.

Applications must be signed by the Principal Investigator **and** by the individual who is authorized to commit the applicant's organization to the terms and conditions of the Cooperative Agreement, if awarded. Note that both Item Nos. 15 and 16 on DOE Form 4650.2, "Face Page" (Appendix D) require completion.

### **3.3 General Instructions**

#### **A. Number of Volumes and Copies**

Applications are to be submitted in three (3) separate volumes, to the address specified in Section 6, and be clearly marked as follows:

Volume I - Technical Application

Volume II - Business Application

Volume III - Cost Application

An original and nine (9) consecutively numbered copies of each volume shall be submitted. Each volume should include a table of contents and consecutively numbered pages.

#### **B. Page Size**

The pages should be of standard 8-1/2" x 11" size (21.6cm x 27.9cm), with 1" margins around the top, bottom, and sides, and printed on **ONE SIDE ONLY**. For proportionally spaced fonts, the type can be no smaller than 12 point, and for non-proportionally spaced fonts, the type can be no smaller than 12 characters per inch (elite).

#### **C. Page Limitations**

The maximum number of pages permitted for Volume I - Technical Application, is determined, in part, by the number of tasks within the overall Scope of Work (Section 1.2) the applicant elects to submit a proposal for. If work under only one task is proposed, the application **shall not exceed 25 pages in length - exclusive of the Face Page (DOE Form 4650.2), Table of Contents, Task Requirements Matrix, Abstract, Technical Summary, Letter(s) of Commitment, and Resumes.**

Five additional pages per task are allowed for each of the other four tasks. For example, if work under two tasks is proposed, the application shall not exceed 30 pages; if work under three tasks is proposed, the application shall not exceed 35 pages, etc.

**Pages in excess of the maximum page limitation for Volume I - Technical Application shall not be evaluated.**

Resumes shall be no longer than two pages each. In addition, no material may be included by reference as a means to circumvent the page limitation.

There are no page limitations in effect for either Volume II - Business Application or for Volume III - Cost Application.

### **3.4 Application Format**

#### **A. VOLUME I - TECHNICAL APPLICATION**

Applicants shall complete the Application Face Page (DOE Form 4650.2), found in Appendix D, as the cover page to each of the required number of copies of the Technical Application. No other cover page is permitted.

The Technical Application shall begin with the Task Requirements Matrix, followed by an Abstract and a Technical Summary (see Items 1, 2 and 3). It shall then provide a thorough discussion of, and provide all the information requested under, Item 4. Technical Evaluation Criteria. Letters of Commitment and Resumes, as required, will complete the Technical Application.

The Task Requirements Matrix, Abstract, and Technical Summary **will not** be evaluated from a technical standpoint. The Task Requirements Matrix will assist evaluators in determining whether the application has met each Qualification Criterion of the solicitation. The Abstract and Technical Summary are important elements of the Technical Application and will assist evaluators to better understand the overall technical approach of the applicant.

- 1. Task Requirements Matrix (Appendix Q)** – The applicant shall complete the Task Requirements Matrix, stating that it meets, or does not meet, each of the three solicitation Qualification Criteria, and providing the application page numbers where these answers can be verified.



2. **Abstract:** A non-sensitive/non-proprietary abstract of the application shall be provided for release outside the Department of Energy. It shall summarize the major features of the application and its advantages to the Government. The abstract shall be no longer than one page.
3. **Technical Summary:** This shall be a stand-alone section, which summarizes the technical information and gives insight into the logic of the application. The Technical Summary shall be no more than five pages. The applicant shall:
  - a. Summarize the proposed work and explain how the proposed approach meets the objectives of the solicitation.
  - b. Include a discussion of the technical problem areas, including those issues which inhibit the development of the proposed system. Proposed solutions to all identified problem areas shall be included.
  - c. Include a schedule for completion of the proposed effort and indicate critical interactions of key events.
  - d. Identify team members and the percentage and type of cost sharing each member will provide. **Note: no cost data shall be provided in this section.**

With the exception of the Abstract, the Technical Application may contain proprietary data. Applications containing proprietary data must be clearly marked in accordance with Section 5.3 of this solicitation.

4. **Technical Evaluation Criteria:** The Technical Application shall address each criterion in the same sequence as set forth below.

**Criterion 1: Description of Advanced Material System(s) and Turbine System and/or Advanced Industrial Turbine System (50 points)**

With respect to an overall advanced industrial turbine, the application shall discuss the proposed advanced material system(s) under which the proposed research and development effort will be performed. The application shall provide a complete

and clear description of the proposed advanced material system(s) and the present developmental status, including results from any related research and development efforts. In addition, proposed gas-turbine components comprising the advanced material system, the current development status, the method(s) by which they will be designed and fabricated, and potential advantages of using such components will be discussed.

The application will discuss the innovative aspects and, if required, for the success of the concept, changes or modifications to the turbine and subsystem components. All deviations from usual turbine practice will be explained, and focused solutions will be proposed for the integration of such deviations with respect to the advanced industrial turbine.

The application will discuss the impact of the proposed technology with respect to efficiency reliability, ease of operation, maintainability, availability and competitiveness of the overall gas turbine system, including quantifiable incremental benefits and impacts (both positive and negative) related to energy efficiency, economics, the environment, and U.S. competitiveness. The description will further discuss the effectiveness of the proposed advanced material system(s) for accomplishing or making substantial progress toward the program goals (Section 1.1.2).

The description also will discuss the beneficial and advantageous aspects of the proposed advanced material system(s) that will enhance the potential for widespread implementation in the Industries of the Future (Section 1.1.3, Definition 4).

With a focus on the Industries of the Future but not excluding other applications, the description will identify all barriers to the adoption of the advanced material system(s) including technical risks, institutional blocks and other impediments, and provide convincing discussion on how these barriers will be resolved. Such description also will identify affected stakeholders (Section 1.1.3, Definition 7) and discuss how the incorporation of their viewpoints can synergistically facilitate a favorable outcome for the project.

In addition, the description will discuss the Applicant's approach to completing Subtask A and B (if applicable).

## **Criterion 2. Research, Development and Test (RD&T) Plan (20 points)**

Commensurate with the constraint of a three-year maximum term of award and the current maturation of the research and development effort proposed, the RD&T Plan shall describe the methodology proposed to raise the technical understanding and to resolve the technical risks, institutional blocks, and other impediments to implementing the advanced material system in gas turbines. Such description also

will describe the method to be used to incorporate the viewpoints of the stakeholders to facilitate a favorable outcome for the project.

Relative to the objectives of this solicitation (Section 1.1.2), the applicant shall discuss the rationale and objectives for each major activity (experimental and analytical) proposed. The RD&T Plan shall incorporate all task-dependent work elements for the tasks selected as set forth in the Scope of Work (Section 1.2). The RD&T Plan shall also discuss the integration, roles, and responsibilities of all team members.

The application's RD&T Plan shall include a management plan for all tasks (including Subtasks) with the following elements:

- A. A work breakdown structure by task that includes a title, concise description, resource requirements for each task, and bulleted methodology describing how the work within each task will be accomplished;
- B. A schedule of activities including identification of principal milestones, task dependencies, and decision points;
- C. A discussion of available resources to meet the manpower and material requirements as scheduled;
- D. A description of organizational and individual responsibilities that integrate the activities of all team members; and
- E. A discussion of how all of the various entities will work together to accomplish the proposed work, and a description of the method that will maintain organizational control over budget, schedule, and quality of performance. An organization chart that shows the relationships of all participants (the applicant, subcontracts, consultants, etc.) shall also be included.

### **Criterion 3: Applicant's Capabilities, Personnel, and Facilities (30 points)**

Relative to the advanced material systems, industrial gas turbines, and the Industries of the Future, the application shall describe the expertise and related experience of the multi-partner team (the applicant, subcontractors, consultants, etc.). The application will discuss the contribution each will make to the project and address the applicant's knowledge and familiarity with the specific technology and activities for executing the RD&T plan. The team's success in prior commercialization of new technologies will be discussed.

The application shall also discuss the capabilities of the material and turbine manufacturers on the team, and end users as discussed in the Scope of Work (Section 1.2). The application should also identify the capabilities of other team members. The discussion should indicate how each team member would contribute to the resolution of barriers concerning the achievement of the project's

objectives and to the resolution of other matters that are important to affected stakeholders.

The application will also identify, and provide resumes, of the project manager and key individuals from the project team, and give their assignments, percentage of time such individuals will be dedicated to this project, and statements about why this time assignment is appropriate. Resumes, not to exceed two pages per person, shall be provided for these individuals.

The application will identify and describe available equipment and facilities of the project team for performing the RD&T plan, including for Task 5, an Industries of the Future demonstration host site. The application will also describe any additional equipment and facilities that will be required and how they will be obtained, including, for Task 5, an Industry of the Future host site. If it is not feasible to obtain an Industry of the Future demonstration host site, the applicant must provide a convincing explanation of how the demonstration benefits Industry of the Future companies.

## **B. VOLUME II - BUSINESS APPLICATION**

The Volume II - Business Application should contain the following items. There is no page limitation for this Volume.

1. Face Page (DOE Form 4650.2) - Complete the form included as Appendix D to this solicitation. This is to be the cover page on each of the required number of copies of your Business Application. No other cover page is permitted.
2. Complete the “Representation Concerning Financial Management System”, included in this solicitation as Appendix E.
3. Complete the “Assurance of Compliance” (DOE F 1600.5), included in this solicitation as Appendix F.
4. Complete the “Certifications Regarding Lobbying, Debarment, Suspension and Other Responsibility Matters; and Drug-Free Workplace Requirements” (FA-CERTS), included in this solicitation as Appendix G.
5. Complete the “Disclosure of Lobbying Activities” (SF-LLL), included in this solicitation as Appendix H.
6. Complete the “Financial Assistance Pre-Award Information Sheet” (AA-47), included in this solicitation as Appendix I. **Note: This**

**form must be completed by any proposed teaming partner as well.**

7. Complete the “Automated Clearing House (ACH) Vendor/Miscellaneous Payment Enrollment Form”, included in this solicitation as Appendix J.
8. Complete the “EPAct Representation”, included in this solicitation as Appendix K.
9. Complete the “Simpson/Craig Amendment Representation”, included in this solicitation as Appendix L, if your organization is described in Section 501(c)(4) of the Internal Revenue Code of 1986.
10. Complete the “National Environmental Policy Act Environmental Evaluation Notification Form”, included in this solicitation as Appendix M.
11. Financial Capability Information

To be eligible for award, an applicant must demonstrate adequate financial capability and resources to perform the work specified in its application. Accordingly, an applicant must submit its latest certified annual report, Form 10K, financial statements, and any other evidence to demonstrate its capability to carry out the proposed effort from a business and financial standpoint. In addition, the applicant shall state approximately what percentage the proposed work will represent of the applicant’s total business during the period of performance.

12. **Similar Financial Assistance Applications, Proposals, or Awards**

While it is permissible, with notification in the financial assistance applications, to submit identical or essentially identical applications/proposals for consideration under numerous Federal program solicitations, it is unlawful to enter into multiple contracts or financial assistance awards which involve the same, or essentially the same, effort. If an application/proposal for identical or similar work has been previously funded, is under consideration for funding, or is about to be submitted to another federal agency or to the DOE in a separate action, the applicant **must** provide the following information in its application:

- A. The name and address of the agency to which the application/proposal was submitted, or will be submitted, or from which an award is expected or has been received;
  - B. The date of submission or the date of award;
  - C. The title of the application or proposal;
  - D. The name and title of the Project Manager or Principal Investigator for each application/proposal submitted, or for those awards received; and
  - E. The number and date of the solicitation under which the application/proposal was submitted, or award was received;
13. Provide addresses for all team members and facilities that will be used to perform the scope of work.

**B. VOLUME III - COST APPLICATION**

The Volume III - Cost Application should contain the following information. There is no page limitation for this Volume.

1. **Application Face Page (DOE Form 4650.2)** - Complete the form included as Appendix D to this solicitation. This is to be the cover page on each of the required number of copies of your Cost Application. No other cover page is permitted.
2. Each applicant shall complete a Budget Page, DOE F 4620.1, (Appendix N) **for each task** for which it applies. If the task is for a multi-year period, the applicant shall submit a summary Budget Page covering the entire period of the task, as well as separate budget pages for each year of the task. Each yearly Budget Page shall also include a Budget Explanation Page(s) (Appendix O). In addition, all costs associated with Subtasks A and or B shall be reflected in the budget information provided for the task(s) which the Subtask is a part.

For example, if an application is submitted under Task 1 and Task 3, and each task is for a three-year period, the applicant shall submit a Budget Page, and an accompanying Budget Explanation Page(s) for each year of Task 1, and a separate Budget Page and Budget Explanation Page(s) for each year of Task 3. A summary Budget

Page for each task shall also be submitted. In this example, a total of 8 budget pages would be required - four for Task 1 and four for Task 3 – along with 6 Budget Explanation Pages.

The above information is also required for each subcontractor or consultant that is to perform more than \$100,000 of the proposed costs. For those subcontractors or consultants who are expected to perform less than \$100,000 of the proposed costs, the basis for their costs shall be included in the applicant's Budget Explanation Page(s).

Also, in accordance with Section 2.4, Cost Sharing, the summary Budget Page for each task shall reflect the minimum cost sharing required for that task.

3. **Indirect Rates** - If indirect cost rates have been negotiated with or approved by a Federal agency for the period covered, provide a copy of the agreement and do not submit the data required in Appendix P. If no current rate agreement exists, submit an indirect cost rate proposal using the model provided in Appendix P. In either case, identify separately the proposed indirect costs for each of your accounting periods included in the application. Clearly identify each rate and allocation base for indirect costs such as Fringe Benefits, Overhead, General and Administrative, Facilities Capital Cost of Money, etc. Also, the applicant shall provide copies of rate agreements or a separate indirect cost rate proposal for any subcontractor or consultant performing more than \$100,000 of the proposed costs.
4. **Cost Sharing** - Applicants must provide a detailed breakout and discussion of all proposed cost sharing. Clearly identify the source and amounts of all cost sharing commitments. An applicant must complete the "Representation Regarding Proposed Cost Sharing", included in this solicitation as Appendix C.

In accordance with Section 2.3, all costs associated with DOE National Laboratory's participation via the use of a CRADA must be shown on the budget as being included in the cost sharing proposed by the applicant. Federal funds shall not be used to fund any CRADA performance.

### **3.5 General Correspondence**

Questions pertaining to the requirements and/or content of this solicitation must be addressed, in writing (by correspondence, by FAX, or by electronic mail), to the Panel

Chairperson identified in Section 6 of this solicitation. Only the Panel Chairperson is authorized to provide such instruction or guidance. Minor administrative concerns may be addressed over the telephone at the Panel Chairperson's discretion. The Panel Chairperson can be reached at:

Telephone No.: (630) 252-2708

Fax No.: (630) 252-5045

E-Mail Address: roberta.schroeder@ch.doe.gov

#### **4. Method of Selection and Evaluation Criteria**

##### **4.1 Overview**

An application will be eliminated from consideration if it does not meet the Qualification Criteria set forth in Section 2.5, or if it is so obviously deficient as to be totally unacceptable on its face. All other applications will undergo a comprehensive technical evaluation in accordance with the evaluation criteria set forth in this Section.

The Technical Application will be numerically point scored in accordance with the evaluation criteria and weights set forth in this Section.

The Business Application will not be numerically point scored nor will it be adjectivally rated. However, it will be used by the Evaluation Panel to conduct a general business review of your application, and to make the required responsibility determination.

The Cost Application will not be point scored or adjectivally rated, but will be evaluated to determine if the total estimated cost proposed by the applicant is commensurate with the technical effort proposed, and to confirm that the cost sharing requirements of the solicitation have been met.

The Source Selection Official will also consider the Program Policy Factors identified below before making a final selection decision. Award(s) will be made to those responsible applicants whose applications conform to the requirements of this solicitation, and whose applications are determined to best achieve the goals and objectives described in this solicitation.



**4.2     Technical Evaluation Criteria and Weights**

With respect to the Technical Evaluation Criteria set forth in this section, the following are the weighting factors that will be utilized to point score each application:

Criterion 1 - Description of Advanced Material System(s) and Turbine System and/or Advanced Industrial Turbine System	50 pts
Criterion 2 - Research, Development and Test (RD&T) Plan	20 pts
Criterion 3 - Capabilities, Personnel and Facilities	30 pts
Total points possible.....	100 pts

**Technical Evaluation Criteria**

**Criterion 1:   Description of Advanced Materials System(s) and Turbine System and/or Advanced Industrial Turbine System (50 pts.)**

The evaluation will consider the completeness and clarity of the description offered in support of the technical viability of the concept, its innovative aspects (Section 1.1.3, Definition 5); the impact of the proposed technology with respect to efficiency, reliability, ease of operation, maintainability, availability, and competitiveness of the overall gas turbine system including the quantifiable incremental benefits and impacts (both positive and negative) on energy efficiency, economics, the environment, and U.S. competitiveness.

The evaluation will examine the potential of the concept to meet or exceed the solicitation objectives. The proposed technology will also be evaluated for ease of commercial implementation, including, for example, resolving barriers to adoption of the technology and addressing stakeholder viewpoints. In addition, the evaluation will consider the validity and comprehensiveness of the applicants approach to accomplishing Subtask A or B (as applicable) with regard to the elements as described in the scope of work (Section 1.2).

**Criterion 2:   Research, Development and Test (RD&T) Plan (20 pts.)**

The RD&T Plan will be evaluated relative to the logic and sequence of the tasks (including subtasks) proposed, the fulfillment of the conditions for each task as discussed in the Scope of Work (Section 1.2), and the expected maturation of the advanced materials system(s) and Turbine System and/or Advanced Industrial Turbine System concept relative to the objectives of this solicitation (Section 1.1.2, Items 1 through 7). This will include the RD&T Plan’s clarity and probable effectiveness in raising technical understanding, resolving technical risks, institutional blocks, and other impediments. The RD&T Plan will be evaluated for its effectiveness, completeness, and adequacy in

controlling the project's technical progress, schedule, cost and organizational responsibilities.

The evaluation will consider the effectiveness of the integration of the roles and responsibilities of the applicant's team for achieving the project's objectives and its effectiveness for resolving the variance of interests of affected stakeholders. The RD&T Plan will also be evaluated on the relevancy of the proposed R&D methods to the achievement of the project's goals, and the number of team members (gas turbine manufacturers and end users) in excess of the minimum number required by the solicitation.

### **Criterion 3: Applicant's Capabilities, Personnel, and Facilities (30 pts.)**

The qualifications, experience, and capabilities of the multi-partner team, and its key individuals at any tier will be evaluated. The evaluation will consider the team's knowledge and experience in the same or similar work, and its familiarity with the application of the advanced materials system(s) concept and Turbine System and/or Advanced Industrial Turbine System in the power generation industry at large and in the Industries of the Future; market factors that will affect implementation; the team's experience in prior commercialization of new technologies; the qualifications of the key individuals and the appropriateness of the percentage of their time that will be devoted to this project; the suitability of the facilities, including the Task 5 demonstration host site (specifically how it relates to and benefits Industry of the future Companies), available, or planned to be made available for development, testing, and evaluating the concept under the proposed RD&T Plan; and the completeness of the representation of the affected stakeholders on the team, and the degree to which the teaming arrangement will benefit Industries of the Future and the gas turbine industry at large.

#### **4.3 Business Evaluation**

The Business Application should be submitted in accordance with the instructions provided under Section 3.4.B., above. It will not be point scored nor will it be adjectivally rated. The information submitted will be utilized by the Evaluation Panel to conduct a general business review of the application, and to make the responsibility determination required by 10 CFR 600.

#### **4.4 Cost Evaluation**

The Cost Application should be submitted in accordance with the instructions provided under Section 3.4 C., above. It will not be point scored nor will it be adjectivally rated. The information submitted will be utilized by the Evaluation Panel to determine if the total estimated cost proposed by the applicant is commensurate with the technical effort proposed, and to confirm that the cost sharing requirements of the solicitation have been met.

#### **4.5 Program Policy Factors**

Program Policy Factors, while not indicative of an application's individual merit, are relevant and essential to the process of selecting applications which best achieve the Department's overall programmatic goals and objectives. The Program Policy Factors applicable to selecting applications for award under this solicitation are set forth below. All are of equal importance. Upon completion of the technical, business, and cost evaluations, these Program Policy Factors will be applied against those applications which are deemed potential candidates for award, before final selections are made:

1. A diversity of methods and approaches to achieve highly efficient, reliable and environmentally superior advanced materials systems and/or Advanced Industrial Gas Turbine systems.
2. Supporting complementary efforts or projects which, when taken together, will best achieve the program goals.
3. Greatest potential to benefit the economy of the United States.
4. Teams that represent a diversity of proposing organizations.
5. Location of development and test sites.

#### **4.6 Debriefings**

If a written request for a debriefing is received by the Panel Chairperson within ten (10) calendar days after the announcement of the final selection(s), a verbal debriefing will be conducted, providing information pertinent to DOE's evaluation and scoring of the application. DOE will not disclose the identity of the reviewers, their verbatim comments, or specific scores and comments pertaining to the evaluation of other applications received. Debriefings will be scheduled at a time that is mutually convenient to DOE and the applicant.

### **5. Intellectual Property Provisions**

#### **5.1 Right to Request Patent Waiver**

Applicants and prospective applicants, in accordance with applicable statutes and the Department of Energy Acquisition Regulation (DEAR), have the right to request, in advance of or within 30 days after the effective date of award, a waiver of all or any part of the rights of the United States in subject inventions. Small business firms and domestic non-profit organizations normally will receive the Patent Rights clause of DEAR 952.227-71 which permits the recipient to retain title to subject inventions, except in contracts for management and operation of a Government-owned research or production facility and in

contracts involving exceptional circumstances or intelligence activities. Therefore, small business firms and non-profit organizations normally need not request a waiver.

## **5.2 Advance Waiver of Patent Rights**

The terms of the advance waiver of patent rights are at Federal Acquisition Regulation (FAR) 52.227-12, as supplemented by 10 CFR 784, DOE patent waiver regulations, and are subject to such mutually acceptable modifications as may be appropriate considering the nature of the technology, the U.S. manufacturing base, and the relevant markets.

## **5.3 Proprietary Data**

The Department's policy is to use data included in applications for evaluation purposes only and to protect such information from unauthorized use or disclosure. Applications containing proprietary data should be clearly marked as such on the Face Page and should include, in the Table of Contents, the legend found at 10 CFR 600.15. Each page in the application, which contains proprietary data, should also be clearly marked. The Section entitled "Rights in Proposal Data" found in the "Financial Assistance Pre-Award Information Sheet" (AA-47), Appendix I, should be consistent with the proprietary markings, if any, in the application.

Unless a written request is received by the Panel Chairperson, copies of unsuccessful applications will not be returned to the applicant. Public release of information in any application submitted will be subject to the statutory requirements of the Freedom of Information Act.

In addition to Government personnel, outside evaluators may be used in the evaluation process. In designating outside evaluators, DOE will take into consideration requirements for avoidance of organizational and personal conflicts of interest and the competitive relationship, if any, between the applicant and the prospective outside evaluator. The evaluation will be performed under a confidentiality agreement with the evaluator, stipulating that the data contained in the application will be used only for evaluation purposes and will not be further disclosed. **Applicants are advised that submission of an application constitutes consent for its review by outside evaluators.**

## **5.4 Patent Rights**

For large businesses, the Government normally takes title to all inventions conceived or first actually reduced to practice under a DOE agreement. In this case, because of the anticipated cost sharing, DOE expects to waive title to such inventions to the recipient, subject to the Government's usual license, march-in, and U.S. preference provisions 35 USC 203 and 204. Additionally, DOE's patent waivers will include a U.S. competitiveness provision reflecting the programmatic objectives of the program, i.e., improving the U.S. competitive position and employment opportunities.

Domestic and small businesses and non-profit and educational organizations will have the right to elect to retain title pursuant to 35 USC 200 et seq.

## **5.5 Rights in Technical Data**

The Government has unlimited rights in technical data created under the agreement. Delivery or licensing of technical data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement or as may be negotiated as a condition of a patent waiver to insure continued development toward commercialization of an invention arising under a DOE agreement.

Under the Energy Policy Act, it is anticipated that DOE will be able to withhold technical data created under this program for up to five (5) years from the time it is created. This will be addressed on a case-by-case basis for each agreement considering the technology involved as well as other factors. After the five year time period expires, such data is subject to release if it is a Government record.

## **6. Submission of Applications**

### **6.1 Mailing Address**

Electronic submission (e.g., telegraph, facsimile, or Internet) of applications is not authorized and such submissions will not be considered for evaluation. Applications must be submitted in writing to the following address, with external markings for the submission as set forth below:

FROM: (applicant name and address)

TO: U.S. Department of Energy  
Chicago Operations Office  
Communications Center  
Building 201, Room 168  
9800 South Cass Avenue  
Argonne, IL 60439-4899

ATTN: Roberta D. Schroeder, Chairperson  
Acquisition and Assistance Group

**THIS DOCUMENT IS SUBMITTED UNDER  
SOLICITATION NUMBER DE-SC02-00CH11005  
AND IS TO BE OPENED ONLY BY THE INDIVIDUAL  
DESIGNATED ABOVE**

## **6.2 Due Date for Applications**

The deadline for receipt of applications is 3:00 p.m., local time, February 11, 2000.

## **6.3 Late Applications**

Subject to the provisions of Section 6.3 (i) through (viii), an application received after the above-specified due date and time will not be evaluated. The application will be opened only if necessary for purposes of identification, and then retained with other unsuccessful submissions.

- (i) Any application received at the location designated in Section 6.1 after the exact time specified for receipt of applications will not be considered unless it is received before award is made and -
  - (A) It was sent by registered or certified U.S. or Canadian mail not later than the fifth calendar day before the date specified for receipt of applications (e.g., an application submitted in response to a solicitation requiring receipt of applications by the 20th of the month must have been mailed by the 15th); or
  - (B) It is determined by the Government that the late receipt was due primarily to Government mishandling after receipt at the Government installation; or
  - (C) It was sent by U.S. Postal Service Express Mail Next Day Service-Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of applications. The term “working days” excludes weekends and U.S. Federal holidays; or
  - (D) It was transmitted through an electronic commerce method authorized by the solicitation and was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of applications; or
  - (E) There is acceptable evidence to establish that it was received at the activity designated for receipt of applications and was under the Government’s control prior to the time set for receipt of applications, and the Contracting Officer determines that accepting the late application would not unduly delay the solicitation; or
  - (F) It is the only application received.

- (ii) Any modification of an application or response to request for information, including any final application revision, is subject to the same conditions as in subparagraphs (i)(A) through (i)(E) of this provision.
- (iii) The only acceptable evidence to establish the date of mailing of a late application or modification or revision sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date, or the application, response to a request for information, or modification shall be processed as if mailed late. “Postmark” means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, applicants should request the postal clerk to place a legible hand cancellation bull’s eye postmark on both the receipt and the envelope or wrapper.
- (iv) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the application wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.
- (v) The only acceptable evidence to establish the date of mailing of a late application, modification or revision, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the “Express Mail Next Day Service-Post Office to Addressee” label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. “Postmark” has the same meaning as defined in paragraph (iii) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, applicants should request the postal clerk to place a legible hand cancellation bull’s eye postmark on both the receipt and the envelope or wrapper.
- (vi) Notwithstanding paragraph (i) of this provision, a late modification of an otherwise successful application that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.
- (vii) Applications may be withdrawn by written notice or telegram (including mailgram) received at any time before award. Applications may be withdrawn in person by an applicant or an authorized representative, if the representative’s identity is made known and the representative signs a receipt for the application before award.



- (viii) If an emergency or unanticipated event interrupts normal Government processes so that applications cannot be received at the office designated for receipt of applications by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation or other notice of an extension of the closing date, the time specified for receipt of applications will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

#### 6.4 **Handcarried Applications**

Handcarried applications are those submitted by any means other than through the U.S. or Canadian mail. If an applicant submits its application by means other than the U.S. or Canadian mail the applicant assumes the full responsibility for ensuring that the application is received at the address specified in Section 6.1, by the date and time specified in Section 6.2.

External markings on handcarried application packages shall include substantially the same information provided when submitting the application through the U.S. or Canadian mail (see Section 6.1).

- NOTE:** (1) The U.S. DOE, Chicago Operations Office, is located on the site of the Argonne National Laboratory (ANL), but is a separate and distinct entity from ANL. **As stated above, handcarried applications must be received at only the location specified in Section 6.1.** Delivery to and/or acceptance of an application at any other location, including the ANL Visitor's Reception Center, the ANL Loading Dock at Bldg 5, the DOE Loading Dock at Bldg 201, or to any other ANL or DOE receiving point **DOES NOT CONSTITUTE DELIVERY OF THE APPLICATION IN ACCORDANCE WITH THE TERMS OF THIS SOLICITATION.**
- (2) Signs outside of ANL advising that the Argonne Shipping & Receiving area is located at 9700 South Cass Avenue ARE NOT APPLICABLE to deliveries to the DOE address specified in Section 6.1.
  - (3) ANL is a contractor-operated, controlled-access facility, which may require advance clearance arrangements, particularly for non-U.S. citizens. Sufficient time should be allotted for normal admittance procedures, which may be coordinated with Ms. Roberta Schroeder at (630) 252-2708.



## **7. Regulatory Information**

### **7.1 DOE Minority Economic Impact Program**

No funding is available under the Department of Energy (DOE) Minority Economic Impact (MEI) Program, 10 CFR Part 800, to finance the cost of preparing a financial assistance application under this solicitation.

### **7.2 Catalog of Federal Domestic Assistance**

The Catalog of Federal Domestic Assistance (CFDA) Number for this solicitation is 81.086.

### **7.3 Intergovernmental Review**

Presubmission reviews and clearances under E.O. 12372 “Intergovernmental Review of Federal Programs” are not required under this solicitation.

### **7.4 Applicable Regulations**

The regulations applicable to this solicitation and its resultant awards are codified at 10CFR Part 600, Department of Energy Financial Assistance Rules. These regulations can be found on the DOE Financial Assistance Home Page at:  
<http://www.pr.doe.gov/fahome.html>

### **7.5 Statutory Authority**

The statutory authority for this program is the U.S. Department of Energy Organization Act (Public Law 95-91) and the Energy Policy Act of 1992 (Public Law 102-486, as amended by Public Law 103-437).

### **7.6 Simpson-Craig Amendment**

Applicant organizations which are described in Section 501(c)(4) of the Internal Revenue Code of 1986 and engage in lobbying activities after December 31, 1995 shall not be eligible for the receipt of Federal funds constituting an award, grant, or loan. Section 501(c)(4) of the Internal Revenue Code covers:

*“Civic leagues or organizations not organized for profit but operated exclusively for the promotion of social welfare, or local associations of employees, the membership of which is limited to the employees of a designated person or persons in a particular municipality, and the net*

*earnings of which are devoted exclusively to charitable, educational, or recreational purposes.”*

As set forth in Section 3 of the Lobbying Disclosure Act of 1995, as amended, (2 U.S.C. 1602), lobbying activities are defined broadly to include, among other things, contacts on behalf of an organization with specified employees of the Executive Branch and Congress with regard to federal legislative, regulatory, and program administrative matters. Applicants qualifying as described in Section 501(c)(4) of the Internal Revenue Code of 1986 must fill out the representation included in Appendix L of this solicitation.

#### **7.7 Notice Regarding Eligible/Ineligible Activities**

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.”

#### **7.8 Lobbying Restriction (Interior Act, 2000)**

The awardee agrees that none of the funds obligated on this award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

#### **7.9 Notice Regarding the Purchase of American-Made Equipment and Products – Sense of Congress**

It is the sense of the Congress that, to the greatest extent practicable. All equipment and products purchased with funds made available under this award should be American-made.

#### **7.10 Compliance With Buy American Act**

In accepting this award, the recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1993 (41 U.S.C. 10a-10c, popularly known as the “Buy American Act”). The recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

DOE F 4600.2

(09-92)  
 Replaces EIA-459A  
 All Other Editions are Obsolete

**FEDERAL ASSISTANCE REPORTING CHECKLIST**

<b>1. Identification Number</b> DE-FC02-00CHXXXXXX		<b>2. Program/Project Title</b> Advanced Materials for Advanced Industrial Gas Turbines	
<b>3. Recipient:</b> XXXXX			
<b>4. Reporting Requirements</b>  <b>PROGRAM/PROJECT MANAGEMENT REPORTING</b> <input checked="" type="checkbox"/> DOE F 4600.3, "Federal Assistance Milestone Plan" <input type="checkbox"/> DOE F 4600.3A, "Milestone Log" <input type="checkbox"/> DOE F 4600.4, "Federal Assistance Budget Information" <input type="checkbox"/> DOE F 4600.5, Federal Assistance Management Summary Report <input type="checkbox"/> DOE F 4600.6, "Federal Assistance Program/Project Status Report" <input checked="" type="checkbox"/> SF-269 or SF-269A, "Financial Status Report"  <b>TECHNICAL INFORMATION REPORTING</b> <input checked="" type="checkbox"/> Notice of Energy RD&D Project <input checked="" type="checkbox"/> Technical Progress Report (2), (5), (6), (7) <input checked="" type="checkbox"/> Topical Report (3), (8) <input checked="" type="checkbox"/> Final Technical Report (3), (8)	Frequency	No. of Copies	Addressees (4)
	Q	1,1,1	A,B,C
	Y,F	2	C
	O	1,2	B,C
	Q	1,1,1	A,B,C
	A	1,1,1	A,B,C
F	1,1,1	A,B,C	
<b>FREQUENCY CODES AND DUE DATES:</b> A - As Necessary; within 5 calendar days after events. F - Final; 60 calendar days after the performance of the effort ends. Q - Quarterly; within 30 days after end of calendar quarter or portion thereof. O - One time after project starts; within 30 days after award. X - Required with proposals or the application or with significant planning changes. Y - Yearly; 30 days after the end of program year. (Financial Status Reports 90 days). S - Semiannually; within 30 days after end of program fiscal half year. M - Monthly, Due 10 days after end of month.			
<b>5. Special Instructions:</b>  (1) In addition to the reports listed above, an original and two copies of a Management Plan must be submitted to Addressees A, C and D respectively. This report must be submitted in accordance with codes "O" and "A" listed above and will consist of a work breakdown structure, milestone plan, cost plan by months, and a management control system description.  (2) Technical progress report shall include narrative status by task; current accomplishments, problems, near-term plans, and open items; provide an analysis of variances from schedule and cost plans, and assess overall progress.  (3) See attachment A for special instructions for topical and final reports.  (4) See attachment B for address list for distribution of reports.			
Continued on page 2			
6. Prepared by: (Signature and Date)		7. Reviewed by: (Signature and Date)	

5. Special Instructions (continued):

- (5) Report will be sent electronic e-mail or hardcopy, as requested by addressee.
- (6) The Progress Report will provide project information including, but not limited to, a work breakdown structure, start and end dates, resource amounts and rates, materials, baseline data, task dependencies and other information required to measure the progress of schedule and costs. For Tasks, 3, 4, and/or 5 data shall also be provided via electronic media that is formatted for Microsoft Project.
- (7) If work is proposed under Task 5 and a host site is not able to be identified at the time the application is submitted, a new National Environmental Policy Act (NEPA) form (See Appendix M) must be submitted as soon as a host site is identified. An additional report providing additional information to satisfy NEPA requirements may also be required. Work will not be authorized under Task 5 until a NEPA clearance is obtained.
- (8) Reports will be prepared and sent as a word processor electronic file or other presentation compatible format; in addition to a hard copy, if requested.

## SPECIAL INSTRUCTIONS FOR TOPICAL & FINAL REPORTS

Topical and Final reports shall be prepared in accordance with the following guidelines:

- a. The main body of each report shall be prefaced by an informative abstract of no more than 200 words.
- b. The following notice shall appear on the inside front cover or on the title page of all technical reports:

### NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, project or process disclosed or represents that issue would not infringe privately-owned rights.

- c. The report shall have an introduction which states the objective of the work and provides general information helpful in understanding the report.
- d. Mathematical analysis shall include a listing of fundamental assumptions, boundary conditions, empirical constants and relationships, and a definition of all parameters.
- e. Experimental test data shall include a statement of objectives and description of the tests, and the extent to which the objectives were satisfied.
- f. The report shall contain a "Conclusions" section that summarizes noteworthy results of the work reported.
- g. Topical Reports shall be stand alone documents, prepared when appropriate to:
  - 1. report comprehensive statements of the technical results of work performed on a specific task or phase of the Statement of Work.
  - 2. report details of scientific or technological advances or major breakthroughs.
- h. Three copies of a draft of Topical Reports and Final Reports are to be sent to addressee "B" for review and approval, before issue to distribution.
- i. Final copies of the Topical Report(s) and the Final Technical Report must be accompanied by 2 copies of DOE F 241.1, "Announcement of Department of Energy (DOE) Scientific and Technical Information (STI)."

ADDRESS LIST  
DE-FC02-00CHXXXXX

- A. Program Manager  
U. S. Department of Energy  
Washington, D.C.
- B. Project Manager  
U. S. Department of Energy
- C. Contract Specialist  
U. S. Department of Energy
- D. T.B.D.

**SAMPLE**

**COOPERATIVE AGREEMENT**

U.S. DEPARTMENT OF ENERGY  
NOTICE OF FINANCIAL ASSISTANCE AWARD

Under the authority of Public Law 95-91 Department of Energy Organization Act and  
subject to legislation, regulations and policies applicable to (cite legislative program title):OFFICE OF INDUSTRIAL TECHNOLOGIES

1. PROJECT TITLE XXX		2. INSTRUMENT TYPE <input type="checkbox"/> GRANT <input checked="" type="checkbox"/> COOPERATIVE AGREEMENT			
3. RECIPIENT (Name, address, zip code, area code and telephone No.) XXX  ( )		4. INSTRUMENT NO. DE-FC02-00EEXXXXX		5. AMENDMENT NO. A000	
		6. BUDGET PERIOD From:                      To:		7. PROJECT PERIOD From:                      To:	
		10. TYPE OF AWARD <input checked="" type="checkbox"/> NEW <input type="checkbox"/> CONTINUATION <input type="checkbox"/> RENEWAL <input type="checkbox"/> REVISION <input type="checkbox"/> SUPPLEMENT <input type="checkbox"/> OTHER			
8. RECIPIENT PROJECT DIRECTOR (Name and telephone No.) XXX                      ( )		12. ADMINISTERED FOR DOE BY: (Name, address, zip code, telephone No.) XXX, Contract Specialist U.S. Department of Energy, Chicago Operations Office 9800 South Cass Avenue Argonne, Illinois 60439                      (630) 252-			
9. RECIPIENT BUSINESS OFFICER (Name and telephone No. ) XXX                      ( )					
11. DOE PROJECT OFFICER (Name and telephone No.) XXX                      ( )					

13. RECIPIENT TYPE

<input type="checkbox"/> State Gov't	<input type="checkbox"/> Indian Tribal Gov't	<input type="checkbox"/> Hospital	<input type="checkbox"/> For Profit Organization	<input type="checkbox"/> Individual
<input type="checkbox"/> Local Gov't	<input type="checkbox"/> Institute of Higher Education	<input type="checkbox"/> Other Nonprofit Organization	<input type="checkbox"/> C <input type="checkbox"/> P <input type="checkbox"/> SP	<input type="checkbox"/> OTHER (Specify) _____

14. ACCOUNTING AND APPROPRIATION DATA				15. EMPLOYER I.D. NO./SSN  XXX
a. Appropriation Symbol	b. B&R Number	c. FT/AFP/OC	d. CFA Number	
XXX	XXX	XXX	N/A	

16. BUDGET AND FUNDING INFORMATION	
a. Current Budget Period Information	b. Cumulative DOE Obligations
(1) DOE Funds Obligated This Action                      \$ <u>.00</u>	(1) This Budget Period                      \$ <u>.00</u> [Total of lines a.(1) and a.(3)]
(2) DOE Funds Authorized for Carry Over                      \$ <u>.00</u>	(2) Prior Budget Periods                      \$ <u>.00</u>
(3) DOE Funds Previously Obligated in This Budget Period                      \$ <u>.00</u>	(3) Project Period to Date                      \$ <u>.00</u> [Total of lines b.(1) and b.(2)]
(4) DOE Share of Total Approved Budget                      \$ <u>.00</u>	
(5) Recipient Share of Total Approved Budget                      \$ <u>.00</u>	
(6) Total Approved Budget                      \$ <u>.00</u>	

17. TOTAL ESTIMATED COST OF PROJECT    \$ N/A  
(This is the current estimated cost of the project. It is not a promise to award nor an authorization to expend funds in this amount).

18. AWARD/AGREEMENT TERMS AND CONDITIONS

This award/agreement consists of this form plus the following:

a. Special terms and conditions (if grant) or schedule, general provisions, special provisions (if cooperative agreement)

b. Applicable program regulations (specify)   N/A   (Date) \_\_\_\_\_

c. DOE Assistance Regulations, 10 CFR Part 600, as amended, Subparts A and ☒ B (Grants and Cooperative Agreements) or ☐ C (State and Local Governments)

d. Application/proposal dated \_\_\_\_\_, ☐ as submitted                      ☐ with changes as negotiated

19. REMARKS: See Page 2 of this Notice of Financial Assistance Award		21. AWARDED BY	
20. EVIDENCE OF RECIPIENT ACCEPTANCE			
_____ (Signature of Authorized Recipient Official)                      (Date)		_____ (Signature of Authorized Recipient Official)                      (Date)	
_____ (Name)		_____ (Name)	
_____ (Title)		_____ (Title)	



19. REMARKS (continued)

- A. The following terms and conditions, attached hereto, are made a part hereof:
  - 1. Budget Page - DOE F 4620.1, which sets forth the approved budget for the budget and project period;
  - 2. Federal Assistance Reporting Checklist, dated XX/XX/XX;
  - 3. Special Terms and Conditions for Research Financial Assistance Awards, coded SPRG-1299/APM;
  - 4. Additional Special Provisions
  - 5. Intellectual Property Provisions – Assistance (XXX); and
- B. All references to the term “grant(s)” shall be read as “cooperative agreement(s)”; the term “grantee” shall be read as “participant, recipient or awardee”; and the term “subgrant(s)” shall be read as “subaward(s).”

BUDGET PAGE (DOE F 4620.1)

**REPORTING REQUIREMENTS CHECKLIST  
(SEE APPENDIX A)**

Special Terms and Conditions for Financial Assistance Awards

The requirements of this attachment take precedence over all other requirements of this award found in regulations, the general terms and conditions, DOE orders, etc., except requirements of statutory law. Any apparent contradiction of statutory law stated herein should be presumed to be in error until recipient has sought and received clarification from the Contracting Officer.

1. PAYMENT OFFICE

CR-54/CHO  
Account Payable Division  
U. S. Department of Energy  
P.O. Box 500  
Germantown, MD 20874-0500

2. FINANCE OFFICE

U. S. Department of Energy  
Chicago Operations Office  
Financial Services Group  
9800 South Cass Avenue  
Argonne, Illinois 60439

3. PAYMENT - Advance Payment under this award will be made by:

```

+---+
|  |  Department of Health & Human Services (DHHS) Payment
+---+ Management System (PMS), formerly DOE Letter of Credit.

```

The recipient shall request cash only as needed for immediate disbursements, shall report cash disbursements in a timely manner, and shall impose the same standards of timing and amount, including reporting requirements, on secondary recipients.

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+---+
|  |  Automated Clearing House (ACH)
+---+

```

An original Request for Advance or Reimbursement, SF 270, shall be submitted as necessary to the Payment Office specified in Section 1. above, and one copy of the SF 270 shall be submitted to the Contract Specialist specified in Block 12 of the Notice of Financial Assistance Award (DOE F 4600.1). The timing and amount of advances shall be as close as is administratively feasible to the actual disbursements. Such requests shall not be made in excess of reasonable estimates of cash outlays for a 30 day period.

Payment under this award will be accomplished by the Payment Office via ACH, an electronic funds transfer. A completed "Automated Clearing House (ACH) Vendor Miscellaneous Payment Enrollment Form" must be on file with the Finance Office prior to processing your payment.

4. DECONTAMINATION AND/OR DECOMMISSIONING D&D COSTS

Notwithstanding any other provisions of this Agreement, including but not limited to FAR 31.205-31, when applicable, as incorporated by Financial Assistance Rule 600.127(a), the Government shall not be responsible for or have any obligation to the recipient for (i) Decontamination and/or Decommissioning (D&D) of any of the Recipient's facilities, or (ii) any costs which may be incurred by the Recipient in connection with the D&D of any of its facilities due to the performance of the work under this Agreement, whether said work was performed prior to or subsequent to the effective date of this Agreement.

5. FEDERALLY-OWNED PROPERTY

If you acquire federally-owned property under this award whether fabricated, furnished or purchased with Capital Equipment Funds, then a listing of such property shall be submitted on DOE F 4300.3, Summary Report of DOE-Owned Plant & Capital Equipment, to the Contracting Officer within 45 days after August 31 of each year and within 30 days after the project period ends. The report must separately identify items which were fabricated, furnished, or purchased with Capital Equipment funds under this award.

Any Capital Equipment funds and the equipment to be purchased, fabricated, or furnished with such funds are indicated on Page No. 2 of the Notice of Financial Assistance Award.

6. NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS - SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

7. NOTICE REGARDING UNALLOWABLE COSTS AND LOBBYING ACTIVITIES

Recipients of financial assistance are cautioned to carefully review the allowable cost and other provisions applicable to expenditures under their particular award instruments. If financial assistance funds are spent for purposes or in amounts inconsistent with the allowable cost or any other provisions governing expenditures in an award instrument, the government may pursue a number of remedies against the recipient, including in appropriate circumstances, recovery of such funds, termination of the award, suspension or debarment of the recipient from future awards, and criminal prosecution for false statements.

Particular care should be taken by the recipient to comply with the provisions prohibiting the expenditure of funds for lobbying and related activities. Financial assistance awards may be used to describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not to encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation

8. ADDITIONAL PROVISIONS

If the appropriation symbol contained in Block 14.a. of the Notice of Financial Assistance Award for this award is listed below, paragraph 8.a. is applicable to this award, otherwise paragraph 8.b. applies:

89X0213.91      89X0215.91      89X0234.91      89X0235.91

a. Department of Interior and Related Agencies Appropriations Act:1. Lobbying Restriction (Interior Act, 2000)

The awardee agrees that none of the funds obligated on this award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

2. Compliance With Buy American Act

In accepting this award, the recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a-10c, popularly known as the "Buy American Act"). The recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

b. Energy & Water Development Appropriations Act:Lobbying Restriction (Energy and Water Act, 2000)

The awardee agrees that none of the funds obligated on this award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

9. REPORTING

DE-SC02-00CH11005 Appendix B

Failure to comply with the reporting requirements contained in this award will be considered a material noncompliance with the terms of the award. Noncompliance may result in a withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or of unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

**ADDITIONAL SPECIAL PROVISIONS**

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## **ADDITIONAL SPECIAL PROVISIONS**

### **1. COST SHARE CONTRIBUTIONS**

It is the intention of the Government and the Participant to share the allowable and allocable costs of performance of the work during this Agreement as set forth herein.

The Government's contribution and support for this Agreement during the project period \_\_\_\_\_ through \_\_\_\_\_ will be \$\_\_\_\_\_. The Participant will contribute \$\_\_\_\_\_ toward the aforementioned project period. Notwithstanding any other provision in this Agreement, it is the intention of the Government and the Participant to share the total allowable and allocable costs of performance during the project period in the following manner:

<u>Task</u>	<u>Government Share</u>	<u>Participant Share</u>
-------------	-----------------------------	------------------------------

It is understood by the parties that the DOE share of this project period is \$\_\_\_\_\_ and notwithstanding any other provision in this Agreement to the contrary, no additional Federal funding will be provided notwithstanding the total cost of the project at completion.

In the event the project is terminated early or not funded to its completion, the Participant understands and specifically agrees that the Government is not waiving the Participant's requisite cost share requirement and that in the event the project is not funded to its completion or otherwise terminated prior to completion, the Participant is still obligated to meet its requisite cost share. Participant further agrees that upon termination or at the completion of the project, upon notification by the Government, it will promptly submit to the Government all such sums due and owing to satisfy its requisite cost share. Failure to make such payment shall result in the Government undertaking collection action against the Participant. This understanding and agreement shall also apply to any additional budget periods within the project period wherein the Participant's aggregate cost share contribution to that date has not met the requisite cost share.

### **2. FEE**

No fee shall be paid to the Participant for performance under this Agreement.

3. **STATEMENT OF SUBSTANTIAL INVOLVEMENT**

The purpose of the Department of Energy (DOE) entering into this cooperative agreement is to carry out research and application development, which will accelerate the adoption and commercialization of advanced materials systems, in advanced industrial gas turbines, without sacrificing efficiency.

The DOE intends to coordinate the efforts of the participant with the broader DOE goals to promulgate wide spread adoption of combined heat and power systems. DOE thus expects to be substantially involved with the participant's research and development activities. Through nominal reporting, site visits, and review meetings, DOE will actively participate in the interim decisions that may arise from technical and programmatic factors.

The DOE will be substantially involved in all tasks of the Statement of Work. Responsibility for the management, control and direction of the project will be shared by the DOE and the participant. The DOE will participate during the full duration of the project, and will have the authority to redirect the conduct of the work within the Statement of Work. DOE will provide technical direction to the overall program, as well as the individual program elements as it is determined to be necessary and appropriate by DOE. The DOE and the participant together will establish the milestones for the work. The DOE will consult with the participant in providing technical direction, as the DOE determines is necessary, to achieve the milestones.

It is understood that the DOE and the participant together will evaluate the ongoing results of the work, and share responsibility for determining the pathway for subsequent work.

The DOE will collaborate with the participant in the allocation of funds to the various project tasks. The DOE may modify the task funding allocations, considering the recommendations of the participant and the technical work progress.

The DOE will actively monitor progress, including, (at the DOE's option), on-site review of project activities and progress. It is anticipated that the DOE will have frequent contact with the participant by means of telephone, electronic and written correspondence, direct meetings, and the required technical progress reports, in order to remain fully informed regarding the activity and progress of the work, and to provide technical direction as necessary. The DOE will review and approve the results of each phase of the work prior to initiation of the subsequent phase.

DOE staff members will attend meetings and participate in the formation and direction of the scope of key development activities. DOE will review technical progress reports and provide input to these reports as deemed necessary. In addition, DOE will have the right to have National Laboratories or selected private organizations perform independent tests and evaluations of the Cooperative Agreement's deliverables, thus providing an additional measure of technical progress.

In addition to the ongoing review meetings noted above, the cognizant DOE program representatives will require periodic formal briefings from the participant. These will provide a higher level of communication between DOE and the participant, and help DOE to better accomplish its stated responsibilities.

The briefings and review meetings will be presented at a site to be designated by the DOE Project Officer (potential sites are Chicago, IL; Washington, DC; or participant facility). They will outline and explain progress and the results of the project effort. The briefings will involve the participant's Principal Investigator and, as needed, key personnel and support personnel. The projected briefing schedule includes:

- One briefing within 60 days after award
- One briefing 30 days before award expiration
- Briefings no more often than every 3 months between the initial and final briefings.

Other than the terms of this agreement there are no limitations on either the DOE or the participant responsibilities and authorities in the conduct and performance of this research.

**4. CONTINUATION OF WORK**

There will be an evaluation of the progress near the end of each year of the work to determine to either continue, redirect, or terminate the project.

**5. PARTIAL FUNDING**

This cooperative agreement is partially funded on a cost reimbursement basis without fee or profit. The total estimated cost of the project to be conducted during the current budget period is \$\_\_\_\_\_, of which the estimated cost to DOE is \$\_\_\_\_\_ and the estimated cost to the Participant is \$\_\_\_\_\_. The Cumulative DOE Obligations for the current budget period are \$\_\_\_\_\_ and, subject to the availability of additional funds, DOE anticipates obligating an additional \$\_\_\_\_\_ hereunder for the current budget period. The Participant shall not be obligated to continue performance of the project beyond the total of (a) the amount of funds set forth as the Cumulative DOE Obligations for the current budget period in Block 16.b.(1) of the face page; (b) the amount, if any, set forth as DOE Funds Authorized for Carry Over in Block 16.a.(2) of the face page; and (c) the amount of the Participant's corresponding obligation for the current budget period, viz., \$\_\_\_\_\_ (50% of \_\_\_\_\_); provided, however, that once the Cumulative DOE Obligations for the current budget period have been increased by DOE to \$\_\_\_\_\_, the Participants' obligation for the current budget period shall be increased to a total of \$\_\_\_\_\_, and the Participant shall be expected to bring the project (covered by the current budget period) to its conclusion within the amount of \$\_\_\_\_\_, and there is no commitment by DOE to provide any additional funding to the Participant. This cooperative agreement is subject to a refund of unexpended funds to DOE.

**6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**

The Recipient shall not take any irreversible action, pursuant to this Agreement, which would have an adverse affect on the environment prior to DOE providing a NEPA clearance. Such clearance shall notify the Recipient that the DOE NEPA process has been completed, and shall indicate whether DOE has decided to authorize the Recipient to continue with the project. The Recipient shall submit an environmental report/evaluation notification form addressing NEPA issues prior to DOE initiating the NEPA process.

## **INTELLECTUAL PROPERTY PROVISIONS**

The intellectual property provisions contained in the award agreement will be specific to the type of organization receiving the award. The Intellectual Property clause sets can be found at Internet site <http://www.ch.doe.gov/ip/clause.htm>

This web site is for informational purposes only. The applicable Intellectual Property provisions will be incorporated into the resultant Cooperative Agreement and may include minor updates, as necessary.

**REPRESENTATION REGARDING PROPOSED COST SHARING**

At 10 CFR 600.123, the Federal government prescribes certain criteria that proposed awardee cost sharing or matching contributions (including cash and third party in-kind contributions) must meet in order for such cost sharing to be allowable under its financial assistance awards. All cost sharing proposed under this solicitation must meet each of these requirements, and specifically comply with the items set forth below.

All cost sharing shall:

- 1) Be verifiable from the recipient's records;
- 2) Not be included as contributions for any other Federally-assisted project or program;
- 3) Be necessary and reasonable for proper and efficient accomplishment of project or program objectives;
- 4) Be allowable under the applicable cost principles;
- 5) Not be paid by the Federal Government under another award, except where authorized by Federal statute to be used for cost-sharing or matching;
- 6) Be provided for in the proposed budget;
- 7) Not include any foregone fee or profit; and
- 8) Not include any prior costs incurred (i.e., costs to conduct prior research or development, patents, or to develop technical reports under previous research efforts). (Note: item #8 is unique to this solicitation; it is not part of 10 CFR 600.123)

I hereby represent that my proposed cost sharing meets all of the requirements of 10 CFR 600.123, and specifically complies with the criteria set forth above:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Organization

\_\_\_\_\_  
Date

DOE F 4650.2  
(10-91)  
(All Other Editions Are Obsolete)

Department of Energy  
Office of Energy Research (OER)

OMB Control No.  
1910-1400  
(OMB Burden Disclosure  
Statement on Back)

Face Page

TITLE OF PROPOSED RESEARCH:

1. CATALOG OF FEDERAL DOMESTIC ASSISTANCE #:

81.086

2. CONGRESSIONAL DISTRICT:

Applicant Organization's District: \_\_\_\_\_

Project Site's District: \_\_\_\_\_

3. I.R.S. ENTITY IDENTIFICATION OR SSN:

4. AREA OF RESEARCH OR ANNOUNCEMENT TITLE/#:

Solicitation No. DE-SC02-97CH10885

Topic No. \_\_\_\_\_

Subtopic: \_\_\_\_\_

5. HAS THIS RESEARCH PROPOSAL BEEN SUBMITTED  
TO ANY OTHER FEDERAL AGENCY?

Yes \_\_\_\_\_

No \_\_\_\_\_

PLEASE LIST:

6. DOE/OER PROGRAM STAFF CONTACT (if known):

7. TYPE OF APPLICATION:

New \_\_\_\_\_

Renewal \_\_\_\_\_

Continuation \_\_\_\_\_

Revisor \_\_\_\_\_

Supplement \_\_\_\_\_

15. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR  
NAME, TITLE, ADDRESS, AND PHONE NUMBER

8. ORGANIZATION TYPE:

Local Govt. \_\_\_\_\_

State Govt. \_\_\_\_\_

Non-Profit \_\_\_\_\_

Hospital \_\_\_\_\_

Indian Tribal Govt. \_\_\_\_\_

Individual \_\_\_\_\_

Other \_\_\_\_\_

Inst. of Higher Educ. \_\_\_\_\_

For-Profit \_\_\_\_\_

Small Business \_\_\_\_\_

Disadvan. Business \_\_\_\_\_

Women-Owned \_\_\_\_\_

8(a) \_\_\_\_\_

9. CURRENT DOE AWARD # (IF APPLICABLE):

N/A

10. WILL THIS RESEARCH INVOLVE:

10A Human Subjects No \_\_\_\_\_

If yes, \_\_\_\_\_

Exemption No. \_\_\_\_\_

or

IRB Approval Date \_\_\_\_\_

Assurance of Compliance No \_\_\_\_\_

10B Vertebrate Animals No \_\_\_\_\_

If yes, \_\_\_\_\_

IACUC Approval Date \_\_\_\_\_

Animal Welfare Assurance No: \_\_\_\_\_

11. AMOUNT REQUESTED FROM DOE FOR ENTIRE  
PROJECT PERIOD \$ \_\_\_\_\_

Proposed Cost Share \_\_\_\_\_

12. DURATION OF ENTIRE PROJECT PERIOD:

Mo/day/yr

to

Mo/day/yr

13. REQUESTED AWARD START DATE

(Mo/day/yr.)

14. IS APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

Yes (attach an explanation) \_\_\_\_\_

No \_\_\_\_\_

16. ORGANIZATION'S NAME, ADDRESS AND CERTIFYING  
REPRESENTATIVE'S NAME, TITLE, AND PHONE NUMBER

SIGNATURE OF PRINCIPAL INVESTIGATOR/  
PROGRAM DIRECTOR

Date

PI/PD ASSURANCE: I agree to accept responsibility for the scientific conduct of the project and provide the required progress reports if an award is made as a result of this submission. Will provision of false information is a criminal offense. (U.S. Code, Title 18, Section 100)

NOTICE FOR HANDLING PROPOSALS

This submission is to be used only for DOE evaluation purposes and this notice shall be affixed to any reproduction or abstract thereof. All Government and non-Government personnel handling this submission exercise extreme care to ensure that the information contained herein is not duplicated, used, or disclosed in whole or in part for any purpose other than evaluation without written permission except that if an award is made based on this submission, the terms of the award shall control disclosure and use. This notice does not limit the Government's right to use information contained in the submission if it is obtained from another source without restriction. This is a Government notice, and shall not itself be construed to impose any liability upon the Government or Government personnel for any disclosure or use contained in this submission.

PRIVACY ACT STATEMENT

If applicable, you are requested, in accordance with 5 U.S.C., Sec. 562A, to voluntarily provide your Social Security Number (SSN). However, you will not be denied any right, benefit, or privilege provided because of a refusal to disclose your SSN. We request your SSN to aid in accurate identification, referral and review of applications for research/training support for efficient management of Office of Research grant/contract programs

SIGNATURE OF ORGANIZATION'S CERTIFYING  
REPRESENTATIVE

Date

CERTIFICATION & ACCEPTANCE: I certify that the statements herein are true and complete to the best of my knowledge, and accept the obligation to comply with DOE terms and conditions if award is made as the result of this submission. A willfully false certification is a criminal offense (U.S. Code, Title 18, Section 1001).

**REPRESENTATION CONCERNING  
FINANCIAL MANAGEMENT SYSTEM**

At 10 CFR 600.121, the Federal government prescribes certain standards for financial management systems under its financial assistance awards. The degree to which a recipient meets standards for fund control and accountability may impact the method by which the recipient is reimbursed under any resultant award. To receive advance payments, a recipient's financial management system must meet all of the requirements of 10 CFR 600.121, and specifically provide for the following:

- 1) Accurate, current, and complete disclosure of the financial results of each federally-sponsored project or program in accordance with the Department's financial reporting requirements;
- 2) Records that identify adequately the source and application of funds for federally-sponsored activities;
- 3) Effective control over and accountability for all funds, property, and other assets;
- 4) Comparison of outlays with budget amounts for each award;
- 5) Written procedures to minimize the time elapsing between the transfer of funds to the recipient from the U.S. Treasury and the issuance or redemption of checks, warrants, or payments by other means for program purposes by the recipient;
- 6) Written procedures for determining the reasonableness, allocability, and allowability of costs in accordance with the provisions of the applicable Federal cost principles and the terms and conditions of the award; and
- 7) Accounting records, including cost accounting records that are supported by source documentation.

I hereby represent that my financial management system meets all of the standards for financial management systems set forth above:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Organization

\_\_\_\_\_  
Date



**U.S. DEPARTMENT OF ENERGY  
ASSURANCE OF COMPLIANCE  
NONDISCRIMINATION IN FEDERALLY ASSISTED PROGRAMS**

**OMB Burden Disclosure Statement**

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, HR-4.3, Paperwork Reduction Project (1910-0400), U.S. Department of Energy, 1000 Independence Avenue S.W., Washington, DC 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-0400), Washington, DC 20503.

\_\_\_\_ (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385) and Title 10, Code of Federal Regulations, Part 1040. In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

**Applicability and Period of Obligation**

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

**Employment Practices**

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or disability, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

**Subrecipient Assurance**

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws and regulations cited above. To this end, the subrecipient shall be required to sign a written assurance form; however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

**Data Collection and Access to Records**

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and disability; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited

**APPENDIX F**

discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and disability in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Civil Rights, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereof, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance, and that the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person(s) whose signatures appear below and who are authorized to sign this assurance on behalf of the Applicant.

**Applicant Certification**

The Applicant certifies that it has complied, or that, within 90 days of the date of the grant, it will comply with all applicable requirements, of 10 C.F.R. 1040.5 (a copy will be furnished to the Applicant upon written request to DOE).

**DESIGNATED RESPONSIBLE EMPLOYEE**

---

Name and Title (Printed or Typed)

---

Telephone Number

---

Signature

---

Date

---

Applicant's Name

---

Telephone Number

---

Address

---

Date

---

Authorized Official:  
President, Chief Executive Officer  
or Authorized Designee

---

Name and Title (Printed or Typed)

---

Telephone Number

---

Signature

---

Date

## **CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS**

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 10 CFR Part 601 and 10 CFR Part 1036. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

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### **1. Lobbying**

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

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### **2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS**

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
  - (d) Have not within a three-year period preceding this application/proposal had one or more public

transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### 3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub.L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

#### *ALTERNATE I (GRANTEES OTHER THAN INDIVIDUALS)*

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

- (1) The dangers of drug abuse in the workplace;
- (2) The grantee's policy of maintaining a drug-free workplace;
- (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
- (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

- (1) Abide by the terms of the statement; and
- (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

- (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
- (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a),(b),(c),(d),(e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance: (Street address, city, county, state, zip code)

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---

---

☐ Check if there are workplaces on file that are not identified here.

***ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)***

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

---

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

---

NAME OF APPLICANT and PR/AWARD NUMBER and/or PROJECT NAME

---

PRINTED NAME and TITLE OF AUTHORIZED REPRESENTATIVE

---

SIGNATURE and DATE

## INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award loan commitment for the prime entity identified in item 4 or 5.
- 10.(a) Enter the full name, address, city, state and zip code of the registrant under the Lobbying Disclosure Act of 1995 identified in item 4 to influence the covered Federal action.
- 10.(b) Enter the full name of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

(Items 11 through 15 were removed from the form.)

16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Information Resources Management Policy, Plans and Oversight, HR-4.3, Paperwork Reduction Project (1910-1400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and the office of Management and Budget (OMB), Paperwork Reduction Project (0348-0046), Washington, DC 20503.

**DISCLOSURE OF LOBBYING ACTIVITIES**

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

Approved by OMB

0348-0046

(See reverse for public burden disclosure.)

<b>1. Type of Federal Action:</b> <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance		<b>2. Status of Federal Action:</b> <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award		<b>3. Report Type:</b> <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For Material Change Only: year _____ quarter _____ date of last report _____	
<b>4. Name and Address of Reporting Entity:</b>  <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier __, if known.   Congressional District, if known:			<b>5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:</b>     Congressional District, if known:		
<b>6. Federal Department/Agency:</b>			<b>7. Federal Program Name/Description:</b>   CFDA Number, if applicable:		
<b>8. Federal Action Number, if known:</b>			<b>9. Award Amount, if known:</b> \$		
<b>10. a. Name and Address of Lobbying Registrant</b> (if individual, last name, first name, MI):			<b>b. Individuals Performing Services</b> (including address if different from No. 10a) (last name, first name, MI):		
Items 11 through 15 are deleted.					
<small>16 Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</small>			<b>Signature:</b> _____ <b>Print Name:</b> _____ <b>Title:</b> _____ <b>Telephone No.:</b> _____ <b>Date:</b> _____		
<b>Federal Use Only:</b>					Authorized for Local Reproduction Standard Form - LLL

Grantee: \_\_\_\_\_

Solicitation No.: \_\_\_\_\_ Amendment No. \_\_\_\_\_

YES                      NO

### A. SAFETY

A.1. Is there any planned or potential use of ( ) ( )  
radioactive material under the proposed grant?

If "yes" :

- a. Indicate type, quantity, and form of radioactive material:
- b. Indicate the NRC or State License Number under which the radioactive material will be purchased and used (report N/A if not applicable):
- c. Indicate how radioactive waste (if generated) will be disposed:

A.2. Is there any planned or potential use of a ( ) ( ) radiation-producing device e.g., accelerator, reactor, x-ray machine, fusion device under the proposed grant? (For purposes of this question, "radiation" includes articles with energies in the range of KeV or higher. It does not include laser, IR, UV, or microwave radiation.)

If "yes", specify the type of device(s):

If 1 or 2 is "yes", identify:

- a. Principal Investigator and Phone No.:
- b. Health Physicist/Radiation Safety Officer and Phone No.

- 1 -

YES NO

- c. Specific location where radioactive material or radiation-producing device



will be used. (Please indicate if this  
is a government-owned facility):

- A.3. Is it possible for the proposed work to result ( ) ( )  
in the radioactive contamination of equipment  
or real property?

If "yes", describe the expected or potential  
contamination:

(NOTE: If the preceding circumstances change during  
the performance of the work undertaken, and any "No"  
answers would change to "Yes", then the Grantee  
shall notify the Contracting Officer prior to  
utilization of any radioactive material or radiation-  
producing device.)

B. ENVIRONMENT

- B.1. Will proposed grant funds be used for acquisition ( ) ( )  
and/or leasing of real property, construction,  
clearing of land, change in land use, or  
commitment of natural resources?

- B.2. Are any federal, state or local environmental ( ) ( )  
permits necessary for work under the proposed  
grant?

- B.3. Will there be any hazardous liquid and/or ( ) ( )  
solid chemical wastes to be disposed of as a  
result of this project?

If the answer is "yes", describe the type of  
wastes and how they are to be disposed:

- B.4. Will there be any unregulated, unique, and ( ) ( )  
environmentally significant waste products  
generated that are not covered by permits  
presently used?

- 2 -

YES NO

- B.5. Will exotic species of organisms be used under ( ) ( )  
the terms of the grant?

C. INTELLECTUAL PROPERTY

- C.1. THE GRANTEE IS:

- ( ) A University or other institution of higher education or an organization of the type described in Section 501(c)(3) of the Internal Revenue Code of 1954 (26 USC 501(c)) and exempt from taxation under Section 501(a) of the Internal Revenue Code (26 USC 501(a)); or
  - ( ) A nonprofit scientific or educational organization qualified under a State nonprofit organization statute. Please identify the statute.
- 

- ( ) A small business concern as defined at Section 2 of Public Law 85-536 (15 USC 632) and implementing regulations of the administrator of the Small Business Administration.

- ( ) None of the above.

Grantees who have checked NONE OF THE ABOVE have the right to request, in advance of or within 30 days after execution of the grant, in accordance with applicable statutes and DOE Procurement Regulations (9-9, 109-6), a waiver of all or any part of the rights of the United States in Subject Inventions.

Do you intend to request an advance waiver in accordance with DOE PR 9-9.109-6? ( ) ( )

- 3 -

YES    NO

#### C.2. RIGHTS IN PROPOSAL DATA

It is DOE policy for a grant award based on a proposal that, in consideration of the award, the Government shall obtain unlimited rights in the technical data contained in the proposal unless the grantee marks those portions of the technical information which he asserts as "proprietary data" or specifies those portions of such technical data which are not directly related to or will not be utilized in the work to be funded under the grant.

Will restrictions be placed on Government rights in the proposal technical data? ( ) ( )

If yes, identify below the technical data that is proprietary or is not directly related to or will not be utilized in the work to be funded under the grant:

---

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---

C.3. IDENTIFICATION OF TECHNICAL DATA WHICH IS PROPRIETARY

The Rights in Technical Data clause proposed to be used for this grant may not permit the utilization of proprietary data in the grant work or, if the use of proprietary data is permitted, may not be adequate to meet programmatic requirements. Use of data which is proprietary may prevent you from meeting the data requirements of the grant (including delivery of data). Your attention is particularly drawn to the use of LICENSED COMPUTER SOFTWARE.

Will proprietary data be utilized in the grant work?

( ) ( )

If yes, identify below the proprietary data that will be utilized in the grant work:

---

---

---

- 4 -

YES    NO

Will LICENSED COMPUTER SOFTWARE be utilized in the grantwork (by the grantee or any lower tier contractor)?

( ) ( )

If yes, identify the LICENSED COMPUTER SOFTWARE that will be utilized in the grant work:

---

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---

D. HUMAN RESEARCH

- D.1. Does this research work involve the use of human subjects? ( ) ( )
- D.2. Do you intend to award a subcontract that would require research work involving human subjects? ( ) ( )
- D.3. If the answer is yes to either of the foregoing questions, indicate the name, title, and telephone number of a point of contact(s) who can provide detailed information concerning this research project:

Name: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

E. TYPE OF BUSINESS (IF NOT SPECIFICALLY IDENTIFIED IN SECTION B.1. OF THIS PRE-AWARD INFORMATION SHEET)

The Grantee is a:

- ( ) Individual
- ( ) Partnership

- 5 -

- ( ) State or Local Government
- ( ) Joint Venture
- ( ) Other (Identify)

F. SOCIAL SECURITY NUMBER (SSN)

If the Grantee does not have an Internal Revenue Service (IRS) assigned Employer Identification Number (EIN), Grantee SSN is \_\_\_\_\_ . (See block 5 of Grant Application, Standard Form 424.)

G. CONGRESSIONAL DISTRICT AND COUNTY

For the principal place of performance, the Congressional District is \_\_\_\_\_ and the county is \_\_\_\_\_ .

\_\_\_\_\_  
(Organization Name)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
Name and Title of Authorized  
Representative

H. PAYMENT INFORMATION (FOR NEW AWARDEES ONLY)

Financial Institution Name \_\_\_\_\_

Address \_\_\_\_\_

Depositor Account Number \_\_\_\_\_

(Note: Please complete SF 3881 entitled ACH VENDOR/Miscellaneous  
Payment - Enrollment Form.)

- 6 -

# ACH VENDOR/MISCELLANEOUS PAYMENT ENROLLMENT FORM

OMB No. 1510-0056

Expiration Date 06/30/93

This form is used for Automated Clearing House (ACH) payments with an addendum record that contains payment - related information processed through the Vendor Express Program. Recipients of these payments should bring this information to the attention of their financial institution when presenting this form for completion.

## PRIVACY ACT STATEMENT

The following information is provided to comply with the Privacy Act of 1974 (P.L. 93-579). All information collected on this form is required under the provisions of 31 U.S.C. 3322 and 31 CFR 210. This information will be used by the Treasury Department to transmit payment data, by electronic means to vendor's financial institution. Failure to provide the requested information may delay or prevent the receipt of payments through the Automated Clearing House Payment System.

## AGENCY INFORMATION

FEDERAL PROGRAM AGENCY

**U.S. DEPARTMENT OF ENERGY - CHICAGO OPERATIONS OFFICE**

AGENCY IDENTIFIER:

**DOE2**

AGENCY LOCATION CODE (ALC):

**89-00-0701**

ACH FORMAT:

☒ CCD + ☐ CTX ☐ CTP

ADDRESS:

**FINANCIAL SERVICES GROUP****9800 SOUTH CASS AVENUE, ARGONNE, IL 60439**

CONTACT PERSON NAME:

**KIMBERLI POWERS**

TELEPHONE NUMBER

**630/252-2344**

ADDITIONAL INFORMATION:

## PAYEE/COMPANY INFORMATION

NAME

SSN NO. OR TAXPAYER ID NO.

ADDRESS

CONTACT PERSON NAME

TELEPHONE NUMBER:

## FINANCIAL INSTITUTION INFORMATION

NAME

ADDRESS

ACH COORDINATOR NAME:

TELEPHONE NUMBER:

NINE-DIGIT ROUTING TRANSIT NUMBER:

DEPOSITOR ACCOUNT TITLE:

DEPOSITOR ACCOUNT NUMBER:

LOCKBOX NUMBER:

TYPE OF ACCOUNT:

☐

CHECKING

☐

SAVINGS

☐

LOCKBOX

SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL:

(Could be the same as ACH Coordinator)

TELEPHONE NUMBER:

**EPACT REPRESENTATION**

Section 2306 of the Energy Policy Act of 1992, Pub. L. 102-486 establishes eligibility requirements for companies to participate in certain financial assistance programs covered under Titles XX through XXIII of the EPAct. For this purpose, "company" means any business entity other than an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 [26 U.S.C. Section 501(c)(3)].

In order for the Department of Energy (DOE) to make an award to a company under a covered program, DOE must determine that the company's participation will be in the economic interest of the United States and, if the company is not a United States-owned company, that the parent company is incorporated in a foreign country that: affords national treatment to United States-owned companies with regard to access to Government-supported joint ventures in energy research and development; affords national treatment to United States-owned companies with regard to general investment opportunities; and affords protection to intellectual property rights owned by United States-owned companies. To assist DOE in making these determinations, the applicant must answer the following questions and make the representation provided therein. In the event the information submitted is inadequate for DOE to make a determination, DOE will request such additional information as may be required.

**Company Ownership Information:**

(Include this information for each participant in a joint venture.)

1. Is your company a United States-owned company? Yes\_\_\_\_ No\_\_\_\_  
(U.S.-owned company means (1) a company that has majority ownership by individuals who are citizens of the United States, or (2) a company organized under the laws of a State that either has no parent company or has a parent company organized under the laws of a State.)
2. If no, identify the place in which the parent company is incorporated or organized.  
\_\_\_\_\_

**Economic Interest Information:**

1. Will this project result in investments in the U.S. in research and development?  
Yes\_\_\_\_ No\_\_\_\_ If the answer is yes, what percentage of the total estimated cost of the project will be expended in the U.S.? (Contractor and supplier costs are to be included in total estimated costs.) Also, express in terms of dollars. \_\_\_\_\_% ----  
\$ \_\_\_\_\_
2. Will this project result in investments in U.S. in manufacturing? Yes\_\_\_\_ No\_\_\_\_  
If the answer is yes, what percentage of the total estimated cost of the project including contractor and supplier costs will be expended in U.S. manufacturing? Also, express in terms of dollars. \_\_\_\_\_% ---- \$ \_\_\_\_\_

3. Will this project contribute to U.S. employment? Yes\_\_\_\_ No\_\_\_\_  
If the answer is yes, briefly describe how.

4. Does the applicant agree that it will promote the manufacture within the U.S. of products resulting from any resultant technology and competitively procure parts and materials? Yes\_\_\_\_ No\_\_\_\_

Briefly describe plans, if any, for any manufacturing of products arising from the program supported research and development, including the location where such manufacturing is expected to occur.

If your answer is no, please explain.

5. What other benefits to the U.S. will result from this project?

To the best of its current knowledge and belief, the applicant represents that the information provided is current, accurate, and complete and will advise DOE of any changes prior to award.

Applicant \_\_\_\_\_

Title \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



**SIMPSON-CRAIG AMENDMENT**  
**REPRESENTATION**

*Check the appropriate block:*

**The applicant represents that it is an organization described in Section 501(c)(4) of the Internal Revenue Code of 1986 which, after December 31, 1995, has ☐ has not ☐ engaged in any lobbying activities as defined in the Lobbying Disclosure Act of 1995.**

**Applicant:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Signature and Date:** \_\_\_\_\_

## **SUPPLEMENTAL INSTRUCTIONS**

Before the Department of Energy can make an award of financial assistance it must make a determination of environmental effect. The attached Environmental Evaluation Notification Form is used in that process. The Scope of Work under this Solicitation is complex, since applications may encompass multiple Tasks that may be performed at different locations. These supplemental instructions have been prepared to help you fill out the Environmental Evaluation Notification Form in light of the unusual nature of this Solicitation.

You will notice that the attached Environmental Evaluation Notification Form, Section I, requests a Description of the Proposed Action. Please provide a description for each Task, identified by Task number. For example, if your application covers Tasks 3, 4, and 5, provide a description for each Task, identified by its number. Describe the work to be done, e.g., conceptual design that involves only paperwork/computer analysis, bench scale research, or a pilot study. If construction must be undertaken before you can accomplish the work proposed in your application, indicate whether this construction is a modification of an existing structure or the building of a new facility. For bench scale research and pilot studies, indicate the type of equipment that will be used, e.g., generator, conventional laboratory equipment, etc. Additional and more detailed information is needed for pilot scale projects. Also indicate the expected duration of the work to be performed under the specific identified Task. Other information as requested in the Instructions should also be provided.

You will also notice that the attached Environmental Evaluation Notification Form has a Section II, Description of the Affected Environment. When various Tasks are to be performed within the same Affected Environment, it is not necessary to provide this information Task by Task if the Affected Environment is the same. Utilizing the above example, if the application covers Tasks 3, 4, and 5, and Tasks 3 and 4 are performed in an existing corporate research or industrial building, it is acceptable to indicate that the single answer addresses both of these Tasks. It is anticipated that in all cases Task 5 will require a separate description of the Affected Environment.

Finally, if the questions in Section III, Potential Environmental Effects can be answered in the negative for all of the Tasks, a single "No" check mark is sufficient. However, if for any of the Tasks the answer is "Yes", additional information as requested by the form must be submitted for each Task and identified by its Task number.

Your cooperation with these Supplemental Instructions will enable the Department of Energy to evaluate the environmental consequences of the work proposed in your application in a timely manner. Thank you!

CHICAGO OPERATIONS OFFICE  
NATIONAL ENVIRONMENTAL POLICY ACT  
ENVIRONMENTAL EVALUATION NOTIFICATION FORM

Organization's Name: \_\_\_\_\_

Title Of Proposed Research: \_\_\_\_\_

Topic Number: \_\_\_\_\_ Subtopic Number: \_\_\_\_\_

Funding Source: (EE) \_\_\_\_\_

Contractor Project Manager: \_\_\_\_\_ Signature: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor NEPA Reviewer: \_\_\_\_\_ Signature: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Date: \_\_\_\_\_

For information on filling out this sheet call: 630-252-2101 (W. S. White)

I. **Description of Proposed Research:**

II. **Description of Affected Environment:**

### III. **Potential Environmental Effects:**

NOTE: Attach explanation for each "yes" response. Additional information is important and could be significant in the decision making process.)

#### **A. Sensitive Resources: Will the proposed action result in changes and/or disturbances to any of the following resources?**

	<b><u>Yes/No</u></b>
1. Threatened/Endangered Species and/or Critical Habitats	— —
2. Other Protected Species (e.g. Burros, Migratory Birds)	— —
3. Wetlands	— —
4. Archaeological/Hi storic Resources	— —
5. Prime, Unique or Important Farmland	— —
6. Non-Attainment Areas	— —
7. Class I Air Quality Control Region	— —
8. Special Sources of Groundwater (e.g. Sole Source Aquifer)	— —
9. Navigable Air Space	— —
10. Coastal Zones	— —
11. Areas w/Special National Designation (e.g. National Forests, Parks, Trails)	— —
12. Floodplain	— —

#### **B. Regulated Substances/Activities: Will the proposed action involve any of the following regulated substances or activities?**

	<b><u>Yes/No</u></b>
13. Clearing or Excavation (indicate if greater than 5 acres)	— —
14. Dredge or Fill (under Clean Water Act section 404; indicate if greater than 10 acres)	— —
15. Noise (in excess of regulations)	— —
16. Asbestos Removal	— —
17. PCBs	— —
18. Import, Manufacture or Processing of Toxic Substances	— —
19. Chemical Storage/Use	— —
20. Pesticide Use	— —
21. Hazardous, Toxic, or Criteria Pollutant Air Emissions	— —
22. Liquid Effluent	— —
23. Underground Injection	— —
24. Hazardous Waste	— —
25. Underground Storage Tanks	— —
26. Radioactive (AEA) Mixed Waste	— —
27. Radioactive Waste	— —
28. Radiation Exposures	— —

#### **C. Other Relevant Disclosures. Will the proposed action involve the following?**

**Yes/No**

- |     |  |     |
|-----|--|-----|
| 29. | A threatened violation of ES&H regulations/permit requirements   | — — |
| 30. | Siting/Construction/Major Modification of Waste Recovery, or TSD Facilities  | — — |
| 31. | Disturbance of Pre-existing Contamination  | — — |
| 32. | New or Modified Federal/State Permits  | — — |
| 33. | Public controversy<br>(e.g. Environmental Justice Executive Order 12898 consideration and other related public issues) | — — |
| 34. | Action/involvement of Another Federal Agency<br>(e.g. license, funding, approval)                                      | — — |
| 35. | Action of a State Agency in a State with NEPA-type law.<br>(Does the State Environmental Quality Review Act Apply?)    | — — |
| 36. | Public Utilities/Services  | — — |
| 37. | Depletion of a Non-Renewable Resource . . . .  | — — |
| 38. | Is the proposed work bench-top research . . .  | — — |
| 39. | Will the proposed work be performed in an existing laboratory setting  | — — |
| 40. | Is the proposed work a paper study rather than laboratory bench-top research   | — — |

(If you have answered yes to any question above, attach an explanation why "yes" was checked)

NOTE: Do not complete any information below. This information will be completed at the Chicago Operation Office

IV. **Section D Determination:** Is the project/activity appropriate for a determination by the OM under Subpart D of the DOE NEPA Regulations for compliance with NEPA?

**Yes**

A. **DOE-CH NEPA Coordinator Review:**

Indicate the recommendation and specific class of action from Appendix A-D to Subpart D (10 CFR 1021):

**CX**

Category:

**DOE-CH ACQ Review:**

Signature : \_\_\_\_\_ Date: \_\_\_\_\_

B. **DOE CH NEPA Coordinator Review:**

Concurrence with Proposed Class of Action Recommended

Category:

DOE CH NEPA Reviewer: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**CH LGL:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR Part 1021.400 that establishes an action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for the Categorical Exclusion referenced above. Therefore by my signature below, I have determined that the proposed action may be categorically excluded from further NEPA review and documentation.

DOE CH NCO Reviewer: W. Sedgefield White  
Phone No. : 630-252-2101

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**INSTRUCTIONS FOR COMPLETING DOE F 4620.1****1. General**

- a. Each new, renewal and supplemental application must contain Budget Pages in this format unless a pertinent program notice guideline specifically provides otherwise. A separate Budget Page must be completed for each year of support requested.
- b. Continuation funding will not require a budget page unless the amount proposed for funding is either 25% over or under the original recommended amount of support for that period. A cover letter signed by the applicant organization official and the Principal Investigator (PI) must accompany this budget and should be forwarded to the U.S. Department of Energy (DOE) Project Officer listed in item 11 of the DOE Financial Assistance Award.
- c. Duplication of this form and instructions may be done by applicants as DOE will not provide additional copies beyond what is contained in the application kit and guide.

**EACH BUDGET ITEM MUST BE JUSTIFIED ON CONTINUATION PAGES  
FOLLOWING THE BUDGET PAGE.**

In addition to a full discussion of the budget items needed to carry out the proposed work the following information is mandatory to be included on the budget justification continuation pages in order to be considered a complete application.

- A. "Senior Personnel": List any personnel, funds requested for salary, and the number of person months to be funded. Include any additions in Item A6 on the Budget Page.
- B. All "Other Personnel": Must be listed individually, their rate of pay and % as well as length of time working on the project. Also include a written narrative that fully justifies the need for all requested personnel.
- C. "Fringe Benefits": Must include the current fringe benefit rate established for the applicant organization as well as the total cost or a list of cost and type for each individual employed on the project. Tuition remission for undergraduate or graduate students working on the project must be included in this category or listed as a separate line item in the "Other Category" depending on the applicant organization's system of reporting.
- D. "Equipment": List each item, its cost and reason it is needed for the project.
- E. "Travel": List each trip's destination, dates, estimated cost including transportation and subsistence, number of staff traveling and the purpose of the travel and how it relates to the project. This category should include the amounts needed for staff on the project as well as for travel associated with any consultants working on the project.
- F. "Trainee/Participant Costs": Educational projects that intend to support trainees (precollege, college, graduate and post graduate) must list each trainee cost that includes stipend levels and amounts, cost of tuition for each trainee, cost of any travel (provide the same information as that needed under the regular travel category, Item E), and costs for any other related training expenses. Participant costs are those costs associated with conferences, workshops, symposia or institutes and the breakout items should indicate the number of participants, cost for each participant, purpose of the conference, dates and places of meetings and any related administrative expenses.
- G. "Other Direct Costs".
  - 1. Materials & Supplies: Indicate types required and estimate costs.
  - 2. Publication Costs/Documentation/Dissemination: Estimate cost of preparing and publishing project results.
  - 3. Consultant Services: Indicate name, daily compensation, number of days service required and justify.
  - 4. Computer (ADP) Services: Include justification based on established computer service rates at the proposing institution. Purchase of equipment is included under D.
  - 5. Subcontracts: Include a budget and justify details.



6. Other: Itemize and justify details. Under this item list tuition remission for students employed to work on this project listed under personnel category. (Do not include tuition remission if this cost is included under the fringe benefit category).

H. Total Direct Costs: (A through G)

I. Indirect Costs: Specify current rate(s) and base(s). Use current rate(s) negotiated with the cognizant Federal negotiating Agency.

J. Total Direct and Indirect Costs: (H + I)

K. Amount of any required cost-sharing from non-Federal sources.

L. Total Cost of Project (J + K)

The personnel categories listed in Part A and Part B of the Budget Page are defined as follows:

#### A. Senior Personnel

1-5. (Co) Principal Investigator(s) are individual(s) so designated by the grantee institution. A Faculty Associate (faculty member) is an individual-other than the Principal Investigator-who is considered by the performing institution to be a member of its faculty or who holds an appointment as a faculty member at another institution, and who will participate in the project being supported.

#### B. Other Personnel

1. A Postdoctoral Associate is an individual who received a Ph.D., M.D., D.Sc. or equivalent degree less than 5 years ago, who is not a member of the faculty of the performing institution, and who is not reported under Senior personnel above.

2. Other Professional is a person who may or may not hold a doctoral degree or its equivalent who is considered professional and is not reported as a Principal Investigator, faculty associate, postdoctoral associate, or student. Examples of persons included in this category are doctoral associates not reported under B1 above, professional technicians, mathematicians, physicians, veterinarians, systems experts, computer programmers, and design engineers.

3. A Graduate Student (Research assistant) is a part-time or full-time student working on the project in research capacity who holds at least a bachelor's degree or its equivalent and is enrolled in a degree program leading to an advanced degree.

4. An Undergraduate Student is a student who is enrolled in a degree program (part-time or full-time) leading to a bachelor's degree.

5&6. These include persons working on the project in a non- research capacity such as secretaries, clerk-typists, draftsmen, animal caretakers, electricians, and custodial personnel, regardless of whether they hold a degree or are involved in degree work.

**NOTE:** Any personnel category for which funds are requested should indicate the number of persons expected to receive some support and where called for on the budget format, the full-time equivalent (FTE) person-months to the nearest tenth.

#### OMB Burden Disclosure Statement

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, HR-4.3, Paperwork Reduction Project (1910-1400), U.S.

Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-1400), Washington, DC 20503.

ORGANIZATION			Budget Page No:		
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR			Requested Duration: _____ (months)		
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title; A.6. show number in brackets)			DOE SHARE	COST SHARE BY APPLICANT	TOTAL COSTS
	Hrs	\$/hr.			
1.					
2.					
3.					
4.					
5.					
6. (    ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)					
7. (    ) TOTAL SENIOR PERSONNEL (1-6)					
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. (    ) POST DOCTORAL ASSOCIATES					
2. (    ) OTHER PROFESSIONAL (TECHNICIAN, PROGRAMMER, ETC.)					
3. (    ) GRADUATE STUDENTS					
4. (    ) UNDERGRADUATE STUDENTS					
5. (    ) SECRETARIAL - CLERICAL					
6. (    ) OTHER					
TOTAL SALARIES AND WAGES (A+B)					
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)					
D. PERMANENT EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM.)					
TOTAL PERMANENT EQUIPMENT					
E. TRAVEL					
1. DOMESTIC (INCL. CANADA AND U.S. POSSESSIONS)					
2. FOREIGN					
TOTAL TRAVEL					
F. TRAINEE/PARTICIPANT COSTS					
1. STIPENDS (Itemize levels, types + totals on budget justification page)					
2. TUITION & FEES					
3. TRAINEE TRAVEL					
4. OTHER (fully explain on justification page)					
TOTAL PARTICIPANTS (    ) TOTAL COST					
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES					
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					
3. CONSULTANT SERVICES					
4. COMPUTER (ADPE) SERVICES					
5. SUBCONTRACTS					
6. OTHER					
TOTAL OTHER DIRECT COSTS					
H. TOTAL DIRECT COSTS (A THROUGH G)					
I. INDIRECT COSTS (SPECIFY RATE AND BASE)					
TOTAL INDIRECT COSTS					
J. TOTAL DIRECT AND INDIRECT COSTS (H+I)					
K. AMOUNT OF ANY REQUIRED COST SHARING FROM NON-FEDERAL SOURCES					
L. TOTAL COST OF PROJECT (J+K)					
			DOE	APPLICANT	TOTAL

## **BUDGET EXPLANATION PAGE**

### **Budget**

The budget is reported on the Budget Page, DOE F 4620.1. Form DOE F 4620.1 is provided in Appendix N. For each year you propose costs, submit a separate budget form with a budget explanation for each cost element proposed as described below. Also, submit a summary total covering the entire project period on a separate form by major tasks. On a separate page(s), provide a cost breakdown of the proposed budget by major tasks and a month by month spending plan for the duration of the project.

The following budget explanation is required for the proposed cost elements. Additionally, teaming members and subcontractors are also required to submit the below information with their budgets.

### **Personnel**

In support of the proposed personnel costs, provide a supplemental schedule that identifies the labor hours, labor rates, and cost by labor classification for each budget year. Also, indicate the basis for the labor classification, number of hours, and labor rates. An example of the basis for the labor classification and number of hours could be past experience, engineering estimate, etc. An example of the basis for the labor rates could be actual rates for the individuals who will perform the work or an average labor rate for a labor classification or a departmental average rate.

### **Fringe Benefits**

Provide the method used to calculate the proposed rate amount. If a fringe benefit has been negotiated with, or approved by, a Federal Government agency, provide a copy of the agreement. If no rate agreement exists, provide the method used to calculate the proposed amount. See Indirect Costs.

### **Travel**

For each proposed trip, provide the purpose, number of travelers, travel origin and destination, number of days, and a breakdown of costs for airfare, lodging, meals, and incidentals. The basis for the airfare, lodging, meals, and incidentals must be provided, such as past trips, current quotations, Federal Travel Regulations, etc.

### **Equipment**

Provide an itemized list of each piece of equipment, individual costs, and the basis for estimating the cost, for example, vendor quotes, catalog prices, prior invoices, etc.

### **Contractual**

Include in this category the cost of consultants and subcontractors.

#### **Consultants**

Provide the hourly or daily rate along with the basis for the rate. Furnish resumes or similar information regarding qualifications or experience. Provide at least two invoices reflecting hourly or daily rates charged to customers other than the Government. A statement signed by the consultant certifying his or her availability and salary must be provided. If travel or incidental expenses are to be charged, give the basis for these costs.

#### **Subcontractors**

Provide the total cost per year for each subcontractor. Details of subcontractors' costs should appear in the subcontractors' budget explanation.

### **Construction**

Not applicable.

### **Other Direct Costs**

Provide an itemized list with costs for any other item proposed as a direct cost and state the basis for each proposed item.

### **Indirect Costs**

If indirect rates have been negotiated with or approved by a Federal Government agency, please provide a copy of the latest rate agreement. If you do not have a current rate agreement, submit an indirect cost rate proposal based on the model provided in Appendix P for evaluation and negotiation. In either case, provide a breakdown of the proposed indirect costs for each of your accounting periods included in the proposal. Identify the rate and allocation base for each indirect cost, such as Overhead, General and Administrative, Facilities Capital Cost of Money, etc.

### **Model Indirect Cost Rate Proposal**

This model is to be used as a guide in preparing an indirect cost rate submission. The formats included in this model are not mandatory, however the basic data contained in each of the schedules listed below is required for the proposal to be considered adequate. Please note that depending on the size of a firm or organization, complexity of the accounting system, and type of business, some of the schedules may not be required.

The proposal should be prepared on the basis of the firm or organization's fiscal year.

List of required schedules:

Schedule A - General and Administrative Expenses (G&A)

Schedule B - Overhead Expenses

Schedule C - Bases Used to Allocate Indirect Expenses

Schedule D - Claimed Rates for Each Expense Pool

Schedule E - Facilities Capital Cost of Money Factors Computation

Schedule F - Reconciliation of Books of Account and Claimed Direct Cost

Schedule G - Reconciliation of Total Payroll to Total Labor Distributed

General and Administrative Expenses (G&A)  
Fiscal Year Ended 3/31/90

Schedule of Actual Expenses, Adjustments and Claimed Costs

Accounts	Expenses Per General Ledger	Adjustments		Claimed Costs	Notes
Salaries & Wages	\$ 90,007	\$		\$ 90,007	
Legal Fees	1,744			1,744	
Audit Fees	20,585			20,585	
Other Fees	11,776			11,776	
Travel	12,987	(1,295)		11,692	(1)
Entertainment	484	(484)		0	(2)
Advertising & Promotion	354	(287)		67	(3)
Bad Debts	3,018	(3,018)		0	(2)
Tech. Publications	1,500			1,500	
Periodicals	4,935			4,935	
Conventions & Seminars	7,936	(319)		7,617	(1)
Interest Expense	1,001	(1,001)		0	(2)
Holiday	2,322			2,322	
Vacation	5,812			5,812	
Sick Leave	987			987	
Personal Absence	1,082			1,082	
Employee FICA	3,815			3,815	
FUI	183			183	
SUI	910			910	
Workmen's Compensation	516			516	
Health Insurance	8,912			8,912	
Life Insurance	1,087			1,087	
Pension Plan	12,318	(1,883)		10,435	(4)
Tuition Assistance	912			912	
Miscellaneous	2,445			2,445	
SUBTOTAL	197,628	(8,287)		189,341	
Occupancy Allocation-Sch C	23,151			23,151	
SUBTOTAL	220,779	(8,287)		212,492	
IR&D/B&P					
IR&D	9,724			9,724	
IR&D	14,287			14,287	
IR&D	11,822	(715)	@77.74%	11,107	(5)
B&P	6,485			6,485	
B&P	9,525			9,525	
B&P	7,882	(477)	@77.74%	7,405	(5)
IR&D/B&P Overceiling-Sch J		(586)		(568)	(6)
GRAND TOTAL	<u>280,504</u>	(\$ 10,047)		<u>270,457</u>	

Notes Explaining Adjustments:

- (1) Expense of President, Vice President and wives on a personal trip not claimed.
- (2) Unallowable cost per government procurement regulation FAR 31.2.
- (3) Unallowable promotion expense; balance claimed is help-wanted employment advertisement.
- (4) Employer contributions to pension plan in excess of that approved and considered allowable by the ACO.
- (5) Overhead on IR&D/B&P labor is shown at both the General Ledger rate of 82.75% and the claim rate of 77.74%.
- (6) See Schedule J for computation of allowable IR&D/B&P costs.



Overhead Expenses  
Fiscal Year Ended 3/31/90

Schedule of Actual Expenses, Adjustments and Claimed Costs

Accounts	Expenses Per General Ledger	Adjustments	Claimed Costs	Notes
Salaries & Wages	\$ 33,060	\$	\$ 33,060	
Postage & Handling	6,235		6,235	
Office Supplies	6,461		6,461	
Small Equipment	878		878	
Temp. Clerical Help	1,816		1,816	
Other Outside Services	30,281		30,281	
Relocation	1,216	(777)	439	(1)
Business Meals	2,702		2,702	
Telephone Expense - Local	1,814		1,814	
Telephone-Long Distance	43,738		43,738	
Telecopier	2,434		2,434	
Equipment Rent	27,151		27,151	
Recruitment	286		286	
Dues/Memberships	2,112	(500)	1,612	(2)
Insurance	737		737	
Depreciation/Amortization	2,824		2,824	
Repairs & Maintenance	1,681		1,681	
Holiday	20,181		20,181	
Vacation	25,440		25,440	
Sick Leave	14,318		14,318	
Severance Pay	32,419	(23,023)	9,396	(3)
Employer FICA	23,612		23,612	
FUI	1,210		1,210	
SUI	5,813		5,813	
Workmen's Compensation	3,311		3,311	
Health Insurance	31,097		31,097	
Life Insurance	6,833		6,833	
Pension Plan	58,320	(8,612)	49,708	
Miscellaneous	612		612	
SUBTOTAL	388,592	( \$ 32,912)	355,680	
Occupancy Allocation-Sch C	154,932		154,932	
SUBTOTAL	543,524	(32,912)	510,612	
GRAND TOTAL	543,524	( \$ 32,912)	510,612	

Notes Explaining Adjustments:

- (1) Moving charges in excess of those allowable by FAR 31.2.
- (2) Membership fees and tennis dues of one individual - not allowable as per FAR 31.2.
- (3) Severance pay in excess of allowable as per direction of ACO.
- (4) Employer contributions to pension plan in excess of that approved and considered allowable by ACO.

SCHEDULE C

Bases Used to Allocate Indirect Expenses  
Fiscal Year Ended 3/31/90

Pool    General and Administrative Expenses - Schedule A:

Base    Total cost input (excludes G&A, IR&D, B&P, and Cost of Money), see Schedule E.

Pool    Overhead Expenses - Schedule B:

Base    Straight time direct labor dollars of all contracts and projects including labor costs of IR&D/B&P projects, see Schedules E and H.

Pool    Occupancy Expenses - Schedule C:

Base    Square feet assigned to each activity

Pool    Cost of Money (Overhead) - Schedule F:

Base    Straight time direct labor dollars of all contracts and projects including labor costs of IR&D/B&P projects.

Pool    Cost of Money (G&A) - Schedule F:

Base    Total cost input, (excludes G&A, IR&D, B&P, and Cost of Money.)

Claimed Rates for Each Expense Pool  
Fiscal Year Ended 3/31/90

	General Ledger	Adjustments	Claimed Costs
<hr/>			
Overhead			
Overhead Base:			
Contract Labor - Schedule H	\$633,012		\$633,012
IR&D Labor - Schedule H	14,287		14,287 *
B&P Labor - Schedule H	<u>9,525</u>		<u>9,525</u> *
Total Labor	<u>\$656,824</u>		<u>\$656,824</u>
Overhead Pool: - Schedule B	\$543,524	(32,912)	\$510,612
Overhead Rate	82.75%		77.74%
General & Administrative Expense Rate (G&A)			
G&A Base			
Contract direct costs - Schedule H			
Labor			\$633,012
Travel			34,563
Material			842,981
Other direct costs			172,105
Subcontracts			<u>944,841</u>
Total direct costs			\$2,627,502
Overhead - Schedule B			\$543,524 **
Less: IR&D/B&P Overhead transferred to G&A:			
IR&D Overhead @ General Ledger Rate 82.75% X 14,287			(11,822) ***
B&P Overhead @ General Ledger Rate 82.75% X 9,525			(7,882) ***
Total Cost Input			<u>\$3,151,322</u> ****
G&A Pool			
Total Claimed G&A Expenses - Schedule A			<u>\$ 270,457</u> ****
G&A Rate			8.58%

### G&A Rate

#### Explanatory Comments.

\* The IR&D and B&P labor is included in the overhead base in order to allocate a proportionate share of overhead to the labor as required by FAR 31.2. The IR&D/B&P labor and the associated overhead is normally claimed as a part of the G&A expense.

\*\* The claimed G&A base must include both the Schedule B claimed overhead (\$510,612) plus overhead costs incurred but not claimed (\$32,912).

\*\*\* Overhead on the IR&D/B&P labor at the 82.75% rate is added to the G&A pool (Schedule A) and deducted from the G&A base.

\*\*\*\* In summary, the total cost input base consists of contract direct costs plus overhead (claimed and unclaimed) less overhead on IR&D/B&P transferred to the G&A pool. The base does not include IR&D/B&P direct labor or other IR&D/B&P direct costs which are recovered through the G&A pool.

Form CASB-CMF				SCHEDULE E			
<div style="display: flex; justify-content: space-between;"> <div> <u>Period</u>    <u>Rate</u>    <u>Mo.</u>    <u>COM</u>  Apr-Jun 89    9.75    3/12    2.438  Jul-Dec 89    9.125    6/12    4.563  Jan-Mar 90    8.5    3/12    2.125  * 9.126 </div> <div style="text-align: center;"> <b>FACILITIES CAPITAL</b>  <b>COST OF MONEY FACTORS COMPUTATION</b> </div> </div>							
CONTRACTOR:				ADDRESS:			
BUSINESS UNIT:							
COST ACCOUNTING PERIOD:	1. Applicable Cost of Money Rate 9.126% *	2. Accumulation & Direct Distribution of MVB	3. Allocation of Undistributed	4. Total Net Book Value	5. Cost of Money for the Cost Accounting Period	6. Allocation Base for the Period	7. Facilities Capital Cost of Money Factors
Business Unit Facilities Capital	Recorded	62,761	Basis of Allocation	Columns 2 + 3	Columns 1 x 4	In Unit(s) of Measure	Columns 5/4
	Leased Property	156,000					
	Corporate or Group						
	Total	218,761					
	Undistributed	180,000					
	Distributed	38,761					
OVERHEAD POOLS	Overhead	30,345	156,600	186,945	17,061	656,824	.02597
	Less: Cost of Money on IR&D/B&P Labor				(618)	23,812	.02597
					16,443		
G&A EXPENSE POOLS	G&A	8,416	23,400	31,816	2,904		
	Add: Cost of Money on IR&D/B&P Labor				618		
					3,522	322	.00112
TOTAL		38,761	180,000	218,761	19,965		

Reconciliation of Books of Account and Claimed Direct Costs  
Fiscal Year Ended 3/31/90

Description	Amounts per General Ledger	Adjustments	Amount Claimed	Notes
<b>DIRECT COSTS</b>				
Direct Labor	\$ 656,824	\$	\$ 656,824	
Travel	35,173	(1,687)	33,486	(1)
Material	843,192		843,192	
Other Direct Cost	187,493	(3,183)	184,310	(2)
Subcontracts	944,841		944,841	
Total Direct Cost	\$ 2,667,523	\$ (4,870)	\$2,662,653	
	(Schedule H)			

Notes Explaining Adjustments:

- (1) Travel - Costs of first class airfare in excess of coach on contract N00039-88-C-0873.
- (2) ODGS - Overtime premium not allowable by terms of contract N00039-88-C-0873.

\* Includes IR&D/B&P direct costs.

RECONCILIATION OF TOTAL PAYROLL  
TO TOTAL LABOR DISTRIBUTED  
FISCAL YEAR ENDED 3/31/90

Account	Expenses Per General Ledger
Direct Labor	\$656,824
G&A Wages	90,007
G&A Holiday Wages	2,322
G&A Vacation Wages	5,812
G&A Sick Leave	987
G&A Personal Absence	1,082
Overhead Wages	33,060
Overhead Holiday Wages	20,181
Overhead Vacation	25,440
Overhead Sick Leave	14,318
Occupancy Wages	23,280
Overtime Premium (Included in ODC's)	270
TOTAL DISTRIBUTION	<u>\$873,583</u>
1st Quarter	\$220,375
2nd Quarter	220,132
3rd Quarter	229,101
4th Quarter	212,061
+ Prior Year Accrual	15,128
- Current Year Accrual	23,214
TOTAL	<u>\$873,583</u>



# TASK REQUIREMENTS MATRIX

Instructions: The applicant shall complete a Task Requirements Matrix for each task under which work is proposed, and submit the completed matrix with its Technical Application. For each task proposed, the applicant shall review the cited solicitation section, determine whether the requirements of that Qualification Criterion have been met, and provide the section and page(s) within the application where verification of that determination can be found.

Note: All seven of the attached matrices are to be submitted with the application. Task matrices for which no work is proposed shall be marked “N/A”.

## TASK NO. 1

<b>QUALIFICATION CRITERION</b>	<b>APPLICATION MEETS REQUIREMENT (Y/N)</b>	<b>SECTION/PAGES OF APPLICATION VERIFYING ANSWER</b>
1. Teaming (Section 2.2)		
2. National Laboratory Participation (Section 2.3)		
3. Cost Sharing (Section 2.4)		

## TASK NO. 2

<b>QUALIFICATION CRITERION</b>	<b>APPLICATION MEETS REQUIREMENT (Y/N)</b>	<b>SECTION/PAGES OF APPLICATION VERIFYING ANSWER</b>
1. Teaming (Section 2.2)		
2. National Laboratory Participation (Section 2.3)		
3. Cost Sharing (Section 2.4)		

## TASK NO. 3

<b>QUALIFICATION CRITERION</b>	<b>APPLICATION MEETS REQUIREMENT (Y/N)</b>	<b>SECTION/PAGES OF APPLICATION VERIFYING ANSWER</b>
1. Teaming (Section 2.2)		
2. National Laboratory Participation (Section 2.3)		
3. Cost Sharing (Section 2.4)		

## TASK NO. 4

<b>QUALIFICATION CRITERION</b>	<b>APPLICATION MEETS REQUIREMENT (Y/N)</b>	<b>SECTION/PAGES OF APPLICATION VERIFYING ANSWER</b>
1. Teaming (Section 2.2)		
2. National Laboratory Participation (Section 2.3)		
3. Cost Sharing (Section 2.4)		

## TASK NO. 5

<b>QUALIFICATION CRITERION</b>	<b>APPLICATION MEETS REQUIREMENT (Y/N)</b>	<b>SECTION/PAGES OF APPLICATION VERIFYING ANSWER</b>
1. Teaming (Section 2.2)		
2. National Laboratory Participation		
3. Cost Sharing (Section 2.4)		